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QUALIFICATION STANDARDS FOR PERSONNEL RESPONSIBLE FOR HAZARDOUS--ETC(U)  
MAY 76 P A MARTINO

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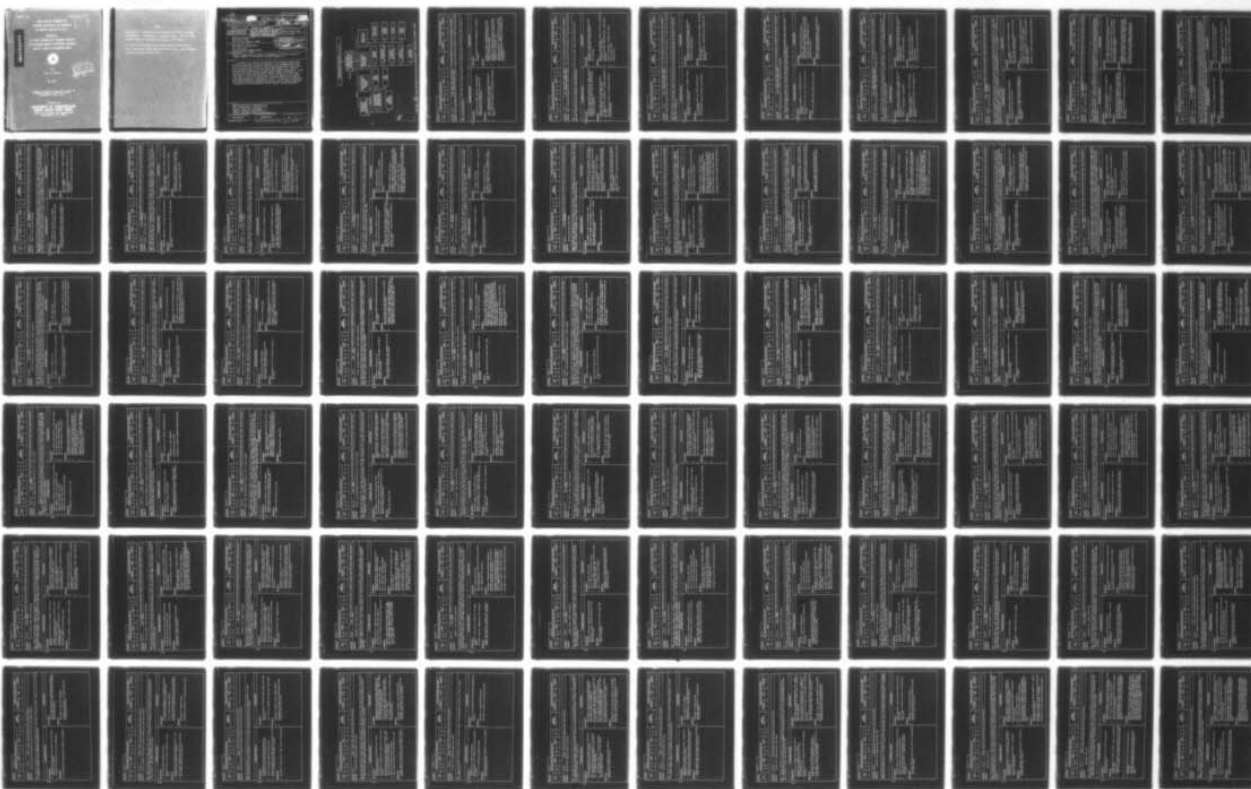
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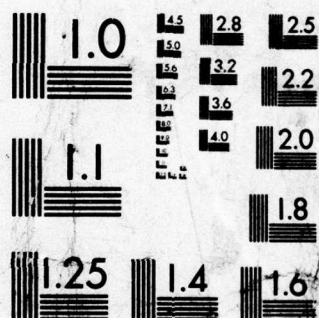


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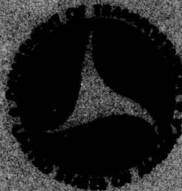
QUALIFICATION STANDARDS FOR  
PERSONNEL RESPONSIBLE FOR HAZARDOUS  
OR NOXIOUS CHEMICALS IN BULK

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APPENDIX K:

FJA TASK STATEMENTS OF PERSONNEL HANDLING  
HIGH PRESSURE-AMBIENT TEMPERATURE HAZARDOUS  
CHEMICAL CARGO ON AN UNMANNED BARGE



By:

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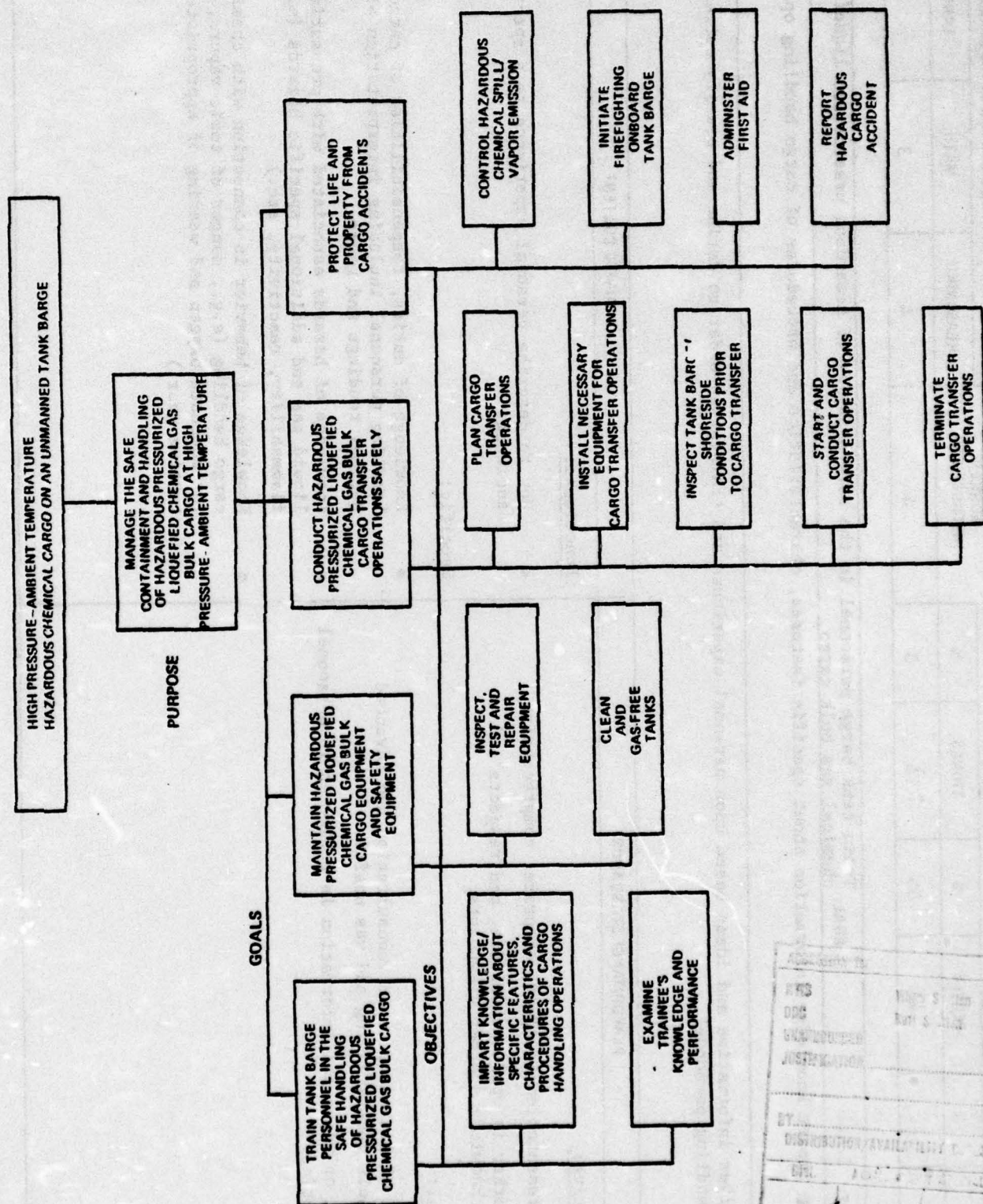
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16. Abstract The report is an analysis of personnel tasks on vessel systems transporting bulk hazardous and noxious chemicals. The recommendations relate to qualifications and training of chemical handling personnel aboard tankships and tank barges for two cargo containment systems (i.e., ambient-pressure-ambient temperature, and high pressure-ambient temperature). Topics discussed are initial personnel certification, renewal of certification, time frame for renewal and retraining. One of the results of this study is a data bank of tasks performed by marine personnel handling bulk chemical cargo (bound separately as Appendices J and K). In addition, an educational curriculum guideline was developed that may be useful to anyone interested in designing a training program for marine chemical handling personnel.		
17. Key Words Hazardous Materials Transportation by Water; Human Factors; Functional Job Analysis; Tank Ship; Tank Barge; Chemical Tankerman, Educational Curriculum; Personnel Training and Qualifications	18. Distribution Statement	
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TASK CODE: I.A.1						
WORKER FUNCTION LEVEL AND ORIENTATION					WORKER INSTRUCTIONS	
DATA	%	PEOPLE	%	THINGS	REASONING	LANGUAGE
4	40	4A	55	1A	4	4

TASK CODE: I.A.1	GOAL: Train tank barge personnel in the safe handling of hazardous pressurized liquefied chemical gas bulk cargo.
OBJECTIVE: Impart knowledge/information about specific features, characteristics and procedures of cargo handling operations.	

TASK: Gives information and ideas based upon personal experience and training in order to define and clarify duties of cargo handling personnel.
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PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>• Presentation is clear, accurate, comprehensive.</li> <li>• Worker is open, perceptive, and respects and acknowledges other viewpoints.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>• XZ of listeners report consultation had advanced their understanding and was useful.</li> <li>• XZ of ideas and information is reflected in personnel duties.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>• How to describe personal experience to a specific audience.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>• Knowledge of duties, responsibilities of cargo handling personnel including interpretation of decimal readings and gages.</li> <li>• Knowledge of hazards associated with pressurized liquid gas and additional specific hazards (e.g., flammability, reactivity, etc.)</li> <li>• Knowledge of behavior in connection with chemical cargo handling (e.g., danger of toxic vapors, need for adequate oxygen and wearing of appropriate protective gear.)</li> </ul>



TASK CODE: I.A.2		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE		
4	55	4B	35	1A	10	5	5	3	4		

TASK CODE: I.A.2	GOAL: Train tank barge personnel in the safe handling of hazardous pressurized liquefied chemical gas bulk cargo.
OBJECTIVE: Impart knowledge/information about specific features, characteristics and procedures of cargo handling operations.	
TASK: Provides on-the-job training (OJT) within guidelines of union contract terms, company policy regulations and personnel interest in order to develop skills above minimum.	
PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Sensitive to personnel's work-related needs, interests.</li> <li>Clear and accurate in demonstrations, explanations.</li> <li>Sensible in selecting time, place for OJT so as not to disrupt operations.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Informal talks are held at prescribed intervals with all personnel, to check their needs.</li> <li>All departures from standards of personnel performance are noted.</li> <li>No casualty occurs because of inadequate personnel skills/knowledge.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>Knowledge of barge and chemical terminal systems, functions, and personnel responsibilities.</li> <li>OJT techniques.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Specific cargo handling, systems, functions, operations, procedures of tank barge.</li> <li>Specific personnel responsibilities, capabilities, experience.</li> <li>Specific performance standards for tasks.</li> <li>Union contract terms.</li> <li>Company policy.</li> </ul>

TASK CODE: I.A.3		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
4	40	4B	40	1A	20	5			5	3	4

TASK CODE: I.A.3	GOAL: chemical gas bulk cargo.	PERFORMANCE STANDARDS		TRAINING CONTENT
OBJECTIVE: Impart knowledge/information about specific features, characteristics and procedures of cargo handling operations.		<p>TASK: Walks personnel through barge, explains layout and special cargo and safety equipment and demonstrates operations particular to specific job, using discretion concerning how detailed orientation/indoctrination should be, in order to orient them to procedures.</p>		<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>Knowledge of cargo handling systems, functions, operations and personnel responsibilities.</li> <li>Teaching and demonstration.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>Specific cargo handling systems, functions, operations and procedures.</li> <li>Specific personnel responsibilities, knowledge, and experience.</li> </ul>



**TASK CODE:** I.B.1

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
5B	60	5	35	1A	5	5	3	4	

**TASK CODE:** I.B.1 **GOAL:** Train tank barge personnel in the safe handling of hazardous pressurized liquefied chemical gas bulk cargo.

**OBJECTIVE:** Examine/evaluate/observe trainee's knowledge and performance.

**TASK:** Evaluates personnel capabilities using full discretion within the limits of authority, union contract terms, company policy, and regulations, in order to plan work schedule and assign personnel.

PERFORMANCE STANDARDS	TRAINING CONTENT
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"> <li>Scheduled assignments are reasonable and fair to personnel.</li> <li>Routine work gets done in an orderly, calm way and on time.</li> </ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"> <li>Reviews and updates work schedule as need arises.</li> </ul>	<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>Authority associated with own position.</li> <li>Personnel duties, responsibilities as defined by union contract terms, company policy, and custom.</li> <li>Procedure for scheduling, assigning work.</li> <li>Communications skills.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>Specific personnel capabilities, characteristics, physical and mental/emotional condition.</li> </ul>



TASK CODE: I. B. 2		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS		GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%			REASONING	MATH	LANGUAGE
4	30	5	65	1A	5	4		4	3	4

TASK CODE: I. B. 2	GOAL: Train tank barge personnel in the safe handling of hazardous pressurized liquefied chemical gas bulk cargo.
OBJECTIVE: Examine/evaluate/observe trainee's knowledge and performance on site.	

TASK: Interviews/evaluates new personnel within guidelines of company policy, union contract terms, regulations, and accepted practice, in order to find out their needs for orientation, specific training, and performance monitoring relevant to barge's chemical cargo containment system.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Personnel needs for orientation, training, and supervision are determined promptly thoroughly, and accurately.</li> <li>Effective communication is established.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Determination is made X hr/day before on-the-job performance is required.</li> <li>Specific knowledge and skills of all personnel are evaluated.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>Responsibilities prescribed for personnel categories and general content of tasks that go with those responsibilities.</li> <li>Informal interview procedure.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Cargo equipment and operating procedures.</li> <li>Safety features and procedures.</li> <li>Company policy.</li> <li>Content of manuals and other information sources.</li> </ul>

TASK CODE: II.A.1		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	30	4A	60	1A	10	4			4	3	4

TASK CODE: II.A.1	GOAL: Maintain hazardous pressurized liquefied chemical gas bulk cargo equipment and safety equipment.
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OBJECTIVE: Inspect, test and repair equipment.

TASK: Reports / describes faulty operations of cargo transfer subsystem equipment and safety equipment (e.g., cargo pumps, fire fighting equipment, personnel protective equipment) to company representative (e.g., Port Engineer), following standard operating procedure, in order to arrange for technical representative to restore equipment to its proper operation according to manufacturer's specifications.

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Conveys information accurately and completely.</li> <li>Presentation is clear and concise.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Over a period of time, less than X% complaints because reports are vague, inaccurate, misleading or incomplete.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>How to explain technical information to Company representative.</li> <li>How to read and understand equipment specifications and manufacturer's instructions.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of equipment and company's representative.</li> <li>Knowledge of tank barge's faulty equipment.</li> <li>Knowledge of tank barge's cargo handling subsystems equipment operation.</li> <li>Knowledge of specific standard operating procedures.</li> </ul>



TASK CODE:		II.A.2						
		WORKER FUNCTION LEVEL AND ORIENTATION						
DATA		%	PEOPLE	%	THINGS	%	WORKER INSTRUCTIONS	
							REASONING	LANGUAGE
3B		50	2	40	1A	10	4	3

TASK CODE:		II.A.2						
		GOAL: Maintain hazardous pressurized liquefied chemical gas bulk cargo equipment and safety equipment.						
OBJECTIVE:		Inspect, test and repair equipment.						
TASK:		Replaces/repairs defective parts to equipment of cargo handling subsystems (e.g., valves, pressure relief devices, flanges, gaskets, cargo hose) calling upon Engineering department personnel for assistance following standard operating procedure and manufacturer's instructions, in order to restore equipment to its proper operation according to manufacturer's specifications.						
		PERFORMANCE STANDARDS						

		TRAINING CONTENT	
Descriptive:	Repairs or replaces defective parts accurately and within specified tolerances.	Functional:	How to read and follow standard operating procedures and equipment manufacturer's instructions.
	Communicates effectively with personnel.		How to repair/replace defective parts to equipment.
Numerical:	In all cases where safe containment of the hazardous pressurized liquefied gas cargo is dependent upon the defective part, adequate repairs are made to the equipment to specifications.	Specific:	General knowledge of operating principles of cargo handling subsystem equipment.
	Less than X% complaints communication is unclear or ineffective.		Knowledge of tank barge's cargo handling subsystem equipment operations (cargo pumps, pressure relief devices, cargo valves, cargo hoses, flanges, gaskets, etc.).
			Knowledge of specific equipment's manufacturer's instructions and standard operating procedures.

TASK CODE: II.A.3		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	60	2	5	1A	35	3			3	3	3

TASK CODE: II.A.3	GOAL: Maintain hazardous pressurized liquefied chemical gas bulk cargo equipment and safety equipment.
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OBJECTIVE: Inspect, test and repair equipment.

TASK: Operates cargo valve (adjusts valve opening by manually turning handwheel), talks on walkie talkie to shoreside personnel operating controls to inert gas generator subsystem to regulate flow of inert gas into cargo lines and tanks, allows inert gas pressure to build up in pressure vessel tanks until safety relief valves pop open, visually checks pressure gage indicating tank pressure when relief valve lifts following standard operating procedure, in order to test the safety relief valve operation and determine if valves are properly set.

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Completes test in a thorough and accurate manner.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Tests all safety devices at specified frequency and in accordance with standard operating procedures.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>How to operate controls to inert gas subsystem.</li> <li>How to test safety relief valve operation.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific safety relief devices and pressure settings.</li> <li>Knowledge of inert gas subsystem operation.</li> <li>Knowledge of specific standard operating procedures.</li> </ul>



TASK CODE: II.A.4		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
2	60	1A	5	1A	35	2			2	1	3

TASK CODE: II.A.4	GOAL: Maintain hazardous pressurized liquefied chemical gas bulk cargo equipment and safety equipment.
OBJECTIVE: Inspect, test and repair equipment.	

TASK: Checks visually respiratory protection equipment according to check list, in order to determine if enough devices are available for cargo transfer personnel when transferring certain toxic pressurized liquefied gas cargo.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Completes inspection thoroughly and accurately.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In all cases of shipping certain toxic chemical cargoes (e.g., chlorine), sufficient respiratory equipment is aboard for each person.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to conduct inventory of equipment.</li> <li>How to add whole numbers.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific respiratory protection equipment.</li> <li>Knowledge of number of persons conducting cargo transfer operations.</li> <li>Knowledge of specific pressurized liquefied gas cargo's hazardous properties (e.g., chlorine's reactivity with other chemicals, fatal health hazard, etc.)</li> <li>Knowledge of specific check list.</li> </ul>

TASK CODE: II.A.5						
WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS		
DATA	%	PEOPLE	%	THINGS	%	LANGUAGE
3B	60	1A	5	1A	35	2
						1
						3

TASK CODE:	II.A.5	GOAL:	Maintain hazardous pressurized liquefied chemical gas bulk cargo equipment and safety equipment.
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**OBJECTIVE:** Inspect, test and repair equipment.

**TASK:** Checks visually medical first aid equipment (such as, oxygen resuscitation equipment and antidotes) according to a check list in order to determine if equipment is available and if antidotes are suitable for the specific pressurized liquefied gas cargoes being loaded/discharged.

PERFORMANCE STANDARDS	TRAINING CONTENT
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**Descriptive:**

- Completes inspection thoroughly and accurately.

**Numerical:**

- In all cases, required antidotes are available for the specific pressurized liquefied gas cargo being shipped.
- In all cases, appropriate medical first aid equipment (such as oxygen resuscitation equipment) is available when certain pressurized liquefied gas cargoes are being loaded/discharged.

**Functional:**

- How to conduct an inventory of equipment using a check list.

**Specific:**

- Knowledge of specific medical first aid equipment (oxygen resuscitation equipment, chemical antidotes).
- Knowledge of the properties and hazards associated with the specific pressurized liquefied gas cargo.
- Knowledge of medical instructions specifying antidote usage.
- Knowledge of specific check list.



TASK CODE: II.A.6		WORKER FUNCTION LEVEL AND ORIENTATION				GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE		THINGS		WORKER INSTRUCTIONS	REASONING	LANGUAGE
		1A	5	40	2A			
3B	55	1A	5	40	2A	3	1	3

TASK CODE: II.A.6	GOAL: Maintain hazardous pressurized liquefied chemical gas bulk cargo equipment and safety equipment.
OBJECTIVE: Inspect, test and repair equipment.	

**TASK:** Inspects visually fire extinguishing equipment according to check list for quantity of charge as indicated by gage, extinguisher shell strength by observing deterioration and/or corrosion of shell; reads inspection tags and log records to determine date of last inspection and tests; notifies by phone recognized company to conduct tests and inspections in accordance with standard operating procedure, in order to ensure equipment is in proper condition.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Completes inspection accurately and thoroughly.</li> <li>Conducts inspections during prescribed time periods.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Completes <u>all</u> inspections at specified frequency and in accordance with standard operating procedures.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to inspect fire extinguishing equipment, read dials.</li> <li>How to read and follow standard operating procedures.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>How to determine quantity of charge, extinguisher shell strength.</li> <li>How to detect deterioration, corrosion, etc. of extinguisher.</li> <li>Knowledge of specific standard operating procedures.</li> </ul>

TASK CODE: II.A.7

WORKER FUNCTION LEVEL AND ORIENTATION						WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	60	1A	5	1A	35	2	2	1	3

TASK CODE: II.A.7      GOAL: Maintain hazardous pressurized liquefied chemical gas bulk cargo equipment and safety

OBJECTIVE: Inspect, test and repair equipment.

TASK: Inspects visually (and by striking parts with hand) brackets and fastenings supporting piping, heating coils, valve rods, monitor tubes, etc., according to check list and using own knowledge and judgment in order to ensure they are secure and free from vibration, thereby preventing a source of ignition from sparks caused by striking metal parts.

PERFORMANCE STANDARDS	TRAINING CONTENT
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"><li>• Completes inspection in a thorough and accurate manner.</li></ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"><li>• Detects loosely secured metal parts in <u>all</u> cases where they exist.</li></ul>	<p><u>Functional:</u></p> <ul style="list-style-type: none"><li>• General knowledge of cargo transfer subsystem layout aboard tank barges.</li><li>• How to detect loosely secured metal hardware.</li></ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"><li>• Knowledge of specific brackets and fastenings supporting piping, heating coils, valve rods, etc.</li><li>• Knowledge of specific check list.</li></ul>



TASK CODE: II.A.8		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	80	1A	5	1A	15	3			3	1	3

TASK CODE: II.A.8	GOAL: Maintain hazardous pressurized liquefied chemical gas bulk cargo equipment and safety equipment.
OBJECTIVE:	Inspect, test and repair equipment.

TASK: Inspects visually external and internal condition of cargo valves, according to check list and using own judgment and knowledge, in order to detect deterioration and ensure proper operating condition of cargo valves.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Completes inspection in a thorough and accurate manner.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Cargo valve operation is adequate in <u>all</u> cases of cargo transfer.</li> <li>In <u>all</u> cases, takes adequate safety precautions to prevent contact with chemical cargo residue having health hazards by wearing protective clothing.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>General knowledge of operating principles of cargo valves and internal parts (body, bonnet, packing glands, disks, gates, seats, guides, stem operating gear, position indicators).</li> <li>How to examine external and internal parts of cargo valve.</li> <li>How to detect poor material condition.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific cargo valve and parts.</li> <li>Knowledge of hazardous properties of specific pressurized liquefied gas cargo previously handled in cargo transfer subsystem.</li> <li>Knowledge of protective equipment (rubber or plastic clothing, boots, gloves, face shields).</li> <li>Knowledge of specific check list.</li> </ul>

TASK CODE: II.A.9		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	75	1A	5	1A	20	2			2	3	3

TASK CODE: II.A.9	GOAL: Maintain hazardous pressurized liquefied chemical gas bulk cargo equipment and safety equipment.
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OBJECTIVE: Inspect, test and repair equipment.

TASK: Inspects visually condition (observes amount of corrosive deterioration) of barge's cargo tanks designated for the carriage of a specific pressurized liquefied gas cargo, according to the check list and using own judgment and knowledge in order to determine material condition of cargo tanks.

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>• Completes inspection thoroughly and accurately.</li> <li>• Follows prescribed precautionary measures.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>• How to examine cargo tanks.</li> <li>• How to detect poor material condition.</li> <li>• How to read and follow prescribed precautionary measures.</li> </ul>
<u>Numerical:</u> <ul style="list-style-type: none"> <li>• Personal entry into cargo tanks is not permitted in all cases where a tank previously contained a chemical cargo that is a health hazard to personnel.</li> <li>• Inspects condition of <u>all</u> cargo tanks according to the check list.</li> </ul>		<u>Specific:</u> <ul style="list-style-type: none"> <li>• Knowledge of specific check list.</li> <li>• Knowledge of inspection procedures of cargo tanks carrying a specific pressurized liquefied gas cargo (i.e., chemical cargo that is a health hazard).</li> <li>• Knowledge of specific cargo tanks.</li> <li>• Knowledge of hazardous properties of a specific pressurized liquefied chemical gas cargo previously handled in cargo transfer subsystem.</li> </ul>



TASK CODE: II.A.10		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	75	1A	5	1A	20	3			3	1	3

TASK CODE: II.A.10	GOAL: Maintain hazardous pressurized liquefied chemical gas bulk cargo equipment and safety equipment.
OBJECTIVE: Inspect, test and repair equipment.	

**TASK:** Inspects visually flexible, metallic cargo hose to be used in pumping pressurized liquefied gas cargo at a particular pressure, looks for corrosion defects, kinks, gouges, according to check list and using own judgment and knowledge, in order to ensure cargo leakage does not occur through body of hose during cargo transfer.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Completes inspection in a thorough and accurate manner.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Cargo leakage through body of hose does not occur in all cases involving cargo transfer.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to inspect cargo hose.</li> <li>How to detect poor material condition of cargo hose.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific check list.</li> <li>Knowledge of manufacturer's recommended working pressure and maximum working pressure for specific cargo hose.</li> </ul>

TASK CODE: II.B.1		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE		
4	80	1	5	1	15	4	4	3	4		

TASK CODE: II.B.1	GOAL: equipment.
<b>SUBJECTIVE:</b> Clean and gas-free cargo tanks.	
<b>TASK:</b> Examines and evaluates data concerning the facilitation of cargo changes in cargo tanks, and considers other factors aboard tank barge using knowledge of cleaning and gas-freeing operations, hazards and restrictions and company and terminal procedures, in order to determine when/if tanks should be cleaned and gas-freeed.	
PERFORMANCE STANDARDS	TRAINING CONTENT
<b>Descriptive:</b> <ul style="list-style-type: none"> <li>• Good judgment is used in discretionary areas.</li> <li>• Evaluates and examines data thoroughly and accurately.</li> <li>• Shows an awareness of potential hazards of cleaning and gas-freeing operations.</li> </ul> <b>Numerical:</b> <ul style="list-style-type: none"> <li>• Examines and evaluates <u>all</u> available data.</li> </ul>	<b>Functional:</b> <ul style="list-style-type: none"> <li>• General knowledge of the operations, hazards and restrictions of cleaning and gas-freeing procedures.</li> <li>• General knowledge of the conditions necessitating cleaning and gas-freeing operations.</li> <li>• How to read, understand company, terminal operating procedures.</li> <li>• How to identify unsafe conditions resulting from improper or inappropriate cleaning and gas-freeing operations.</li> </ul> <b>Specific:</b> <ul style="list-style-type: none"> <li>• Knowledge of chemical characteristics and hazardous properties of cargo being transferred from and to cargo compartments.</li> <li>• Knowledge of specific cleaning and gas-freeing operations.</li> </ul>



TASK CODE: II.B.2		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	45	5	5	2B	50	3			3	3	4

TASK CODE: II.B.2	GOAL: Maintain hazardous pressurized liquefied chemical gas bulk cargo equipment and safety equipment.
OBJECTIVE: Clean and gas-free cargo tanks.	

TASK: Operates cargo valve (adjusts valve opening by manually turning handwheel), talks on walkie-talkie to shoreside personnel operating controls to compressor to regulate gas flow, following standard operating procedure, in order to reduce pressure in tank to near ambient conditions prior to sending tank barge to shipyard for cleaning and gas-freeing of cargo tanks.

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Pressure in cargo tank is reduced in a thorough manner.</li> <li>Maintains effective communication with personnel.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In all cases, pressure in cargo tank is reduced to ambient conditions prior to start of gas-freeing operations.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>How to operate cargo valves.</li> <li>How to read and follow standard operating procedure.</li> <li>How to communicate with personnel.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of shoreside compressor operation.</li> <li>Knowledge of physical and chemical properties of specific pressurized liquefied gas.</li> <li>Knowledge of hazards associated with pressurized liquefied gas and additional specific hazards, (e.g., flammability, reactivity, toxicity, etc.).</li> <li>Knowledge of vessel's cargo transfer subsystem.</li> <li>Knowledge of specific standard operating procedures.</li> </ul>

TASK CODE: III.A.1						
WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS		
DATA	%	PEOPLE	%	THINGS	REASONING	LANGUAGE
4	85	1A	5	1A	4	4

TASK CODE: III.A.1	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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OBJECTIVE: Plan cargo transfer operations.

TASK: Reads/evaluates information on cargo manifest, shipping papers, manufacturer's certificates (such as cargo inhibition and stabilization certificates), comparing information with criteria specified in standard operating procedure, in order to determine if sufficient information is available for safe barge transport of specific pressurized liquefied gas cargo and whether cargo loading should be permitted.

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Compares items on shipping papers with criteria in a thorough and accurate manner.</li> <li>Decisions are consistent with available information.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Refuses cargo loading in <u>all</u> cases where insufficient information is provided.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>How to evaluate shipping data in relation to safety criteria for maintaining cargo stability during transport.</li> <li>How to read shipping papers, standard operating procedures (concentration of stabilizer may be expressed in decimals).</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of standard operating procedures for specific pressurized liquefied gas cargo carried.</li> </ul>



TASK CODE: III.A.2						
WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS		
DATA	PEOPLE		THINGS		REASONING	LANGUAGE
	%	%	%	%		
5B	85	1A	5	1A	4	4

TASK CODE: III.A.2	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
OBJECTIVE: Plan cargo transfer operations.	

**TASK:** Plans the sequence of liquid cargo transfer into or out of various tanks, cargo hose layout, pumps and pipelines to be used; refers to standard operating procedure and tank barge's loading diagram, using own judgment and knowledge in order to minimize dangerous conditions and transfer cargo efficiently.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Cargo transfer plan is complete, accurate and well organized.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Less than XZ complaints that plan was incomplete or inaccurate.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to plan cargo transfer operations logically, safely and efficiently.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of cargo tanks, piping arrangement, cargo pumps, valves, etc.</li> <li>Knowledge of specific pressurized liquefied chemical gas cargo's physical and chemical properties and hazards.</li> <li>Knowledge of tank barge's loading procedures.</li> <li>Knowledge of factors affecting safety (i.e., rate of cargo transfer, possible mixing of incompatible cargoes, cargo weight distribution, tank barge trim and stability, amount of time handling certain cargo and other precautions).</li> <li>Knowledge of specific standard operating procedures.</li> </ul>

TASK CODE: III.A.3		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
4	85	1A	5	1A	10	4			4	4	4

TASK CODE: III.A.3	GOAL: safety.	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations
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OBJECTIVE: Plan cargo transfer operations.

TASK: Evaluates present and expected conditions relative to pressurized liquefied gas cargo pressure, computes estimates of cargo vapor pressure at the maximum expected temperature (considers heat sources such as solar heating and additional pressure due to loading and discharging), refers to chemical data sheets and standard operating procedure, in order to ensure the maximum allowable working pressure of tanks and cargo handling systems are not exceeded.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Evaluation is complete and accurate.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Estimates of vapor pressure are computed in all cases involving the loading of pressurized liquefied gas cargo.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to compute estimates of cargo vapor pressure as a function of temperature.</li> <li>General knowledge of possible heat sources.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of physical and chemical properties of specific pressurized liquefied gas cargo (i.e., vapor pressure vs. temperature relationship).</li> <li>Knowledge of specific chemical data sheets and standard operating procedure.</li> </ul>



TASK CODE: III.A.4		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
4	25	5	70	1A	5	4			4	2	4

TASK CODE: III.A.4	GOAL: safely.	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations
OBJECTIVE: Plan cargo transfer operations.		
<p>Selects and determines the number of people needed to perform the cargo transfer operation aboard tank barge, selecting out on the basis of observable behavior anyone under the influence of liquor or other stimulant, or anyone who is ill or otherwise physically or mentally incapable of performing his assigned duties; checks documented qualifications and describes work details with them, following standard operating procedure and using own judgment in order to ensure personnel resources are available to perform cargo transfer operations safely.</p>		

PERFORMANCE STANDARDS		TRAINING CONTENT
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"> <li>• Selects sufficient number of qualified people.</li> <li>• Communicates task details clearly.</li> </ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"> <li>• In all cases there is sufficient number of people to perform cargo transfer operations.</li> <li>• Fewer than X% of persons selected are physically or mentally incapable of performing assigned tasks.</li> <li>• All documents relating to personnel qualifications are checked for accuracy.</li> </ul>		<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>• How to determine sufficient number of qualified people to perform tasks.</li> <li>• How to judge capabilities of dockside manpower to handle cargo safely.</li> <li>• How to communicate task details.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>• Knowledge of work to be done.</li> <li>• Capabilities of personnel performing cargo transfer.</li> <li>• Knowledge of specific standard operating procedures.</li> </ul>

TASK CODE: III.B.1		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
4	40	5	50	1	10	4			4	3	4

TASK CODE: III.B.1	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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OBJECTIVE: Install necessary equipment for cargo transfer operations.

TASK: Directs personnel in the installation of necessary equipment for tank barge cargo transfer operations, following standard operating procedure, using own judgment and knowledge of cargo transfer operations and related equipment, in order to assure that cargo transfer equipment is installed properly and safely.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>• Directs personnel efficiently, correctly, safely.</li> <li>• Ensures that installations are completed correctly and according to standard operating procedures.</li> <li>• Uses good judgment in discretionary areas.</li> <li>• Maintains effective communication with personnel.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>• Fewer than X% complaints that communication is ineffective.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>• General knowledge of cargo transfer operations and equipment used in such operations.</li> <li>• How to understand standard operating procedures relevant to cargo transfer operations.</li> <li>• General knowledge of hazards and problems commonly associated with the installation of cargo transfer equipment.</li> <li>• How to supervise and communicate with tank barge personnel.</li> <li>• How to identify equipment used in cargo transfer operations.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>• Knowledge of specific standard operating procedures.</li> <li>• Knowledge of properties and hazards of particular cargo being transferred and carried.</li> <li>• Knowledge of specific kinds of equipment required for transfer operations.</li> </ul>



TASK CODE: III.B.2						
WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS		
DATA	%	PEOPLE	%	THINGS	%	LANGUAGE
3B	20	1A	5	2A	75	2

TASK CODE: III.B.2	GOAL: safely.
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OBJECTIVE: Install necessary equipment for cargo transfer operations.

TASK: Connects piping or flexible metallic hose to tank barge's vent piping and shoreside vapor recovery piping using available tools and equipment (lifting gear, such as dockside or barge crane), aligns vapor return subsystem (opens, closes valves) between tank barge cargo tank vents and shore facilities, following standard operating procedure, in order to reclaim vapors during the transfer of a specific pressurized liquefied gas cargo.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Equipment is properly set up.</li> <li>Arrangement is completed accurately and thoroughly according to specified procedures.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Fewer than X% complaints that equipment was not set up according to specified procedures.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to open, close valves and connect piping.</li> <li>How to read and follow prescribed procedures.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of tank barge's cargo vapor return subsystem (piping, valves, pipe flanges, vent pipes, etc.).</li> <li>Knowledge of specific tools and equipment (wrenches, ship's tackle, etc.).</li> <li>Knowledge of specific standard operating procedures.</li> <li>Knowledge of hazardous properties of specific pressurized liquefied gas cargo (e.g., alkylene oxide's toxicity, reactivity, etc.).</li> </ul>

TASK CODE: III.B.3								
WORKER FUNCTION LEVEL AND ORIENTATION				GENERAL EDUCATIONAL DEVELOPMENT				
DATA	%	PEOPLE	%	THINGS	WORKER INSTRUCTIONS	REASONING	MATH	LANGUAGE
2	20	1A	5	2A	2	2	1	3

TASK CODE: III.B.3	GOAL: <u>safely.</u>	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations				
<b>OBJECTIVE:</b> Install necessary equipment for cargo transfer operations.						
<b>TASK:</b> Closes tank barge openings to pressure vessel cargo tanks that will receive specific pressurized liquefied chemical gas cargoes, following standard operating procedure, using available tools and equipment in order to ensure that hazardous vapors are not released to the atmosphere.						
<table border="1"> <thead> <tr> <th>PERFORMANCE STANDARDS</th> <th>TRAINING CONTENT</th> </tr> </thead> <tbody> <tr> <td> <u>Descriptive:</u> <ul style="list-style-type: none"> <li>Cargo tank openings are properly closed.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>All cargo tank openings are closed in accordance with standard operating procedures.</li> </ul> </td> <td> <u>Functional:</u> <ul style="list-style-type: none"> <li>How to close cargo tank openings on barge.</li> <li>How to read standard operating procedures that require certain cargo tank openings to be closed.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific standard operating procedures.</li> <li>Knowledge of specific cargo hatch covers.</li> <li>Knowledge of specific pressurized liquefied gas cargo and its hazards.</li> </ul> </td> </tr> </tbody> </table>			PERFORMANCE STANDARDS	TRAINING CONTENT	<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Cargo tank openings are properly closed.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>All cargo tank openings are closed in accordance with standard operating procedures.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to close cargo tank openings on barge.</li> <li>How to read standard operating procedures that require certain cargo tank openings to be closed.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific standard operating procedures.</li> <li>Knowledge of specific cargo hatch covers.</li> <li>Knowledge of specific pressurized liquefied gas cargo and its hazards.</li> </ul>
PERFORMANCE STANDARDS	TRAINING CONTENT					
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Cargo tank openings are properly closed.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>All cargo tank openings are closed in accordance with standard operating procedures.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to close cargo tank openings on barge.</li> <li>How to read standard operating procedures that require certain cargo tank openings to be closed.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific standard operating procedures.</li> <li>Knowledge of specific cargo hatch covers.</li> <li>Knowledge of specific pressurized liquefied gas cargo and its hazards.</li> </ul>					



TASK CODE: III.B.4		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
2	20	1A	5	2A	75	2			2	2	3

TASK CODE: III.B.4	GOAL: safely.	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations
OBJECTIVE:	Install necessary equipment for cargo transfer operations.	
TASK:	Sets up fire fighting equipment (makes accessible fully charged portable fire extinguishers on board tank barge, fire pump is placed in standby condition) according to standard operating procedure, and with reference to tank barge certificate of inspection specifying the minimum amount of fire extinguishing equipment required in order to have fire fighting equipment readily available before pressurized liquefied gas cargo transfer operations begin.	

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Equipment is properly set up.</li> <li>Arrangement is completed according to requirements.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In all cases, required fire extinguishing equipment is set up according to requirements.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>How to read instructions.</li> <li>How to set up/make accessible fire fighting equipment.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of tank barges certificate of inspection.</li> <li>Knowledge of specific standard operating procedures.</li> <li>Knowledge of barge's and terminal's fire fighting equipment.</li> </ul>

TASK CODE: III.B.5						
WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS		
DATA	%	PEOPLE	%	THINGS	REASONING	LANGUAGE
1	20	1A	5	2A	1	2
			75			

TASK CODE: III.B.5	GOAL: safely.
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**OBJECTIVE:** Install necessary equipment for cargo transfer operations.

**TASK:** Connects a water hose with pressure to the nozzle (connects hose to dockside firemain and opens firemain valve), following standard operating procedure, using available tools in order to ensure a sufficient water supply to wash away small spills of a specific pressurized liquefied gas cargo during cargo transfer operations.

PERFORMANCE STANDARDS	TRAINING CONTENT
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"> <li>• Equipment is properly connected.</li> <li>• Arrangements completed thoroughly according to instructions.</li> </ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"> <li>• Water hose is connected in all cases of specific cargo transfer (e.g., alkylene oxide).</li> </ul>	<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>• How to connect and pressurize water hose.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>• Knowledge of prescribed procedures for connecting water hose.</li> <li>• Knowledge of water hose, firemain, piping system, etc.</li> <li>• Knowledge of hazardous properties of specific pressurized liquefied gas cargo (e.g., alkylene oxide's reactivity, toxicity, etc.).</li> </ul>



TASK CODE: III.B.6		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
2	35	1A	5	2A	60	2			2	1	2

TASK CODE: III.B.6	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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**OBJECTIVE:** Install necessary equipment for cargo transfer operations.

**TASK:** Places warning signs (red flag, warning and chemical information placards), following standard operating procedure, in order to visibly warn personnel that hazardous pressurized liquefied gas cargo is being transferred.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Warning signs are visibly posted.</li> <li>Location of warning signs are in accordance with standard operating procedures.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Warning signs are set up in proper location in all cases.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to set up warning signs.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of standard operating procedures for the display of warning signs.</li> <li>Knowledge of location of chemical cargo information cards at chemical terminal and location of card holder on barge.</li> </ul>

TASK CODE: III.B.7		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE		
2	20	1A	5	2A	75	2	2	1	3		

TASK CODE: III.B.7	GOAL: <i>safely</i>
<b>OBJECTIVE:</b> Install necessary equipment for cargo transfer operations.	
<b>TASK:</b> Connects electrical bonding wire between tank barge and shore piping (through which pressurized liquefied gas cargo is to be transferred) before connecting cargo hose, following standard operation procedure, in order to provide a path to ground for stray currents generated during cargo transfer.	

PERFORMANCE STANDARDS		TRAINING CONTENT
<b>Descriptive:</b> <ul style="list-style-type: none"> <li>Equipment is properly set up.</li> <li>Arrangement is completed thoroughly according to specified procedures.</li> </ul>	<b>Functional:</b> <ul style="list-style-type: none"> <li>How to read standard operating procedures for setting up equipment.</li> </ul>	<b>Specific:</b> <ul style="list-style-type: none"> <li>How to connect electrical bonding wire to specific terminal piping and tank barge.</li> <li>Knowledge of standard operating procedures (i.e., connects wire before cargo hose is connected; before connecting wire to vessel, ensures wire switch is open closes switch after connection is made etc.).</li> </ul>
<b>Numerical:</b> <ul style="list-style-type: none"> <li>Fewer than XZ complaints that equipment was not set up according to specified procedures.</li> </ul>		





TASK CODE: III.C.1		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE		
3B	90	1A	5	1A	5	3	3	2	3		

TASK CODE: III.C.1	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
<b>OBJECTIVE:</b> Inspect tank barge/shoreside conditions prior to cargo transfer.	
<b>TASK:</b> Inspects visually the tank barge's certificate of inspection to determine if it is endorsed for the pressurized liquefied gas to be loaded, making note of any special loading restrictions; checks for display of required warning signs and sees that cargo information cards for the chemical cargo are aboard and other specified items according to check list, using own judgment and knowledge in order to ensure safe conditions prior to cargo transfer.	
PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>• Completes inspection thoroughly.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>• All specified items are inspected.</li> <li>• In all cases, detects unsafe conditions when they exist.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>• How to inspect hardware items aboard tank barges.</li> <li>• How to detect unsafe conditions.</li> <li>• How to read certificate of inspection.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>• Knowledge of specific check list.</li> <li>• Knowledge of tank barge's certificate of inspection, warning signs, chemical cargo information cards.</li> <li>• Knowledge of the specific pressurized liquefied gas cargo to be loaded.</li> </ul>



TASK CODE: III.C.2		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
2	55	2	35	1A	10	3	3	2	3

TASK CODE: III.C.2	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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OBJECTIVE: Inspect tank barge/shoreside conditions prior to cargo transfer.

TASK: Checks visually personnel on tank barge following standard operating procedure, in order to ensure unauthorized personnel are not onboard and that authorized personnel do not board when smoking.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Completes check in a thorough and accurate manner.</li> <li>Communicates clearly with personnel.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Ensures that unauthorized personnel are not onboard tank barge, and authorized personnel do not board tank barge while smoking.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to check for and identify unauthorized personnel.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of authorized personnel.</li> <li>Knowledge of specific standard operating procedures.</li> </ul>

TASK CODE: III.C.3		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE		
3B	90	1A	5	1A	5	3	3	3	3		

TASK CODE: III.C.3	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
<b>OBJECTIVE:</b> Inspect tank barge/shoreside conditions prior to cargo transfer.	
<b>TASK:</b> Inspects fire hoses and hose connections, the placement readiness and accessibility of portable fire extinguishers, standby pumps, and other fire fighting equipment, according to check list and using own judgment in order to ensure that fire fighting equipment is ready and accessible for use in emergency situations.	
PERFORMANCE STANDARDS	TRAINING CONTENT
<b>Descriptive:</b> <ul style="list-style-type: none"> <li>• Completes inspection in a thorough and accurate manner.</li> </ul> <b>Numerical:</b> <ul style="list-style-type: none"> <li>• Ensures <u>all</u> fire fighting equipment is ready and accessible.</li> </ul>	<b>Functional:</b> <ul style="list-style-type: none"> <li>• How to inspect fire hoses, pumps, extinguishers, and other common pieces of fire fighting equipment.</li> <li>• How to read, interpret safety regulations.</li> <li>• How to detect unsafe conditions relating to lack of or inaccessibility of fire fighting equipment.</li> </ul> <b>Specific:</b> <ul style="list-style-type: none"> <li>• Knowledge of type and location of specific fire fighting equipment.</li> <li>• Knowledge of specific check lists for the preparation/readiness of fire fighting equipment.</li> </ul>



TASK CODE: III.C.4		WORKER FUNCTION LEVEL AND ORIENTATION					WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%					REASONING	MATH	LANGUAGE
2	90	1A	5	1A	5		2			2	2	2

TASK CODE: III.C.4	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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OBJECTIVE: Inspect tank barge/shoreside conditions prior to cargo transfer.

TASK: Inspects artificial light sources according to check list in order to ensure that adequate, safe lighting is operational and accessible for nighttime cargo transfer operations.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Completes inspection in a thorough and accurate manner.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Inspects <u>all</u> light sources for adequacy and safety.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to inspect lighting equipment for safety and adequacy.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of type and location of lighting equipment.</li> <li>Knowledge of location of work stations and procedures used on tank barge.</li> <li>Knowledge of specific check list.</li> </ul>

TASK CODE: III.C.5		WORKER FUNCTION LEVEL AND ORIENTATION					WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%					REASONING	MATH	LANGUAGE
4	90	1A	5	1A	5		4			4	3	4

TASK CODE: III.C.5      GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.

OBJECTIVE: Inspect tank barge/shoreside conditions prior to cargo transfer.

TASK: Checks and evaluates if pressurized liquefied gas cargo to be loaded is reactive with preceding one; refers to cargo manifest, cargo loading diagrams, and chemical data sheets, using own judgment and experience in order to determine if it is necessary to remove traces of previous cargo from pressure tanks and cargo handling system before loading.

PERFORMANCE STANDARDS	TRAINING CONTENT
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"> <li>Checks and evaluates cargo information in a thorough and accurate manner.</li> </ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"> <li>In all cases, checks previous cargo in tanks prior to loading.</li> </ul>	<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>How to read and evaluate cargo data from several sources.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>Knowledge of hazards associated with pressurized liquefied gas and additional hazards (i.e., reactivity).</li> <li>Knowledge of specific cargo manifest, cargo loading diagrams and chemical data sheets.</li> </ul>



TASK CODE: III.C.6	
WORKER FUNCTION LEVEL AND ORIENTATION	
DATA	% PEOPLE THINGS %
4	90 1A 5 1A 5

GENERAL EDUCATIONAL DEVELOPMENT	
REASONING	MATH LANGUAGE
4	3 4

TASK CODE: III.C.6	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
OBJECTIVE: Inspect tank barge/shoreside conditions prior to cargo transfer.	
TASK: Checks and evaluates suitability of materials of construction of pressure tanks and high pressure cargo handling system, refers to material specifications, compares with material compatibility data on chemical data sheet for particular cargo, makes certain that materials and cargo are compatible (e.g., they are not dangerously reactive), in order to determine if pressurized gas should be loaded.	
PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Checks and evaluates material specifications and chemical data in a thorough and accurate manner.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In all cases, checks compatibility of vessel's materials and chemical cargo.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to read and evaluate data from several sources.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of hazards associated with pressurized liquefied gas and additional hazards (i.e., vessel material and chemical cargo compatibility).</li> <li>Knowledge of specific vessel specifications and chemical data sheets.</li> </ul>

TASK CODE: III.C.7

WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	90	1A	5	1A	5	3	3	2	3

TASK CODE: III.C.7      GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.

OBJECTIVE: Inspect tank barge/shoreside conditions prior to cargo transfer.

TASK: Inspects visually cargo connections and closure of openings, proper setting of cargo valves; checks that all connections for cargo transfer are made to barge's fixed pipeline system according to check list and using own judgment and knowledge in order to ensure chemical cargoes which react in a hazardous manner when mixed with each other are not loaded in tanks having common pipelines or vent systems.

PERFORMANCE STANDARDS	TRAINING CONTENT
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"> <li>Completes inspection in a thorough manner.</li> </ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"> <li>All specified items are inspected.</li> </ul>	<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>General knowledge of cargo transfer subsystem arrangement aboard a tank barge (cargo hose connections, cargo tanks, cargo valves, pipeline system, and tank vents).</li> <li>How to inspect hardware items aboard a tank barge.</li> <li>How to detect unsafe conditions.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>Knowledge of specific check list.</li> <li>Knowledge of chemical reactivity of specific pressurized liquefied chemical gas cargoes.</li> <li>Knowledge of tank barge's cargo hose connections, cargo tanks, openings, cargo valves, pipeline system, and tank vent systems.</li> </ul>



TASK CODE: III.C.8						
WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS		
DATA	PEOPLE		THINGS		REASONING	LANGUAGE
	%		%			
1	50	2	40	1A	3	3

TASK CODE: III.C.8	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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OBJECTIVE: Inspect tank barge/shoreside conditions prior to cargo transfer.

TASK: Inspects visually the closing of cargo valve when emergency controls (control panel push button switch or manual lever in pipeline) are tested, converses with terminal representative to coordinate test, following standard operating procedure, in order to ensure emergency shut down operation works properly prior to transfer of pressurized liquefied gas cargo.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Completes test accurately and thoroughly.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In all cases, emergency shut down test is conducted prior to hazardous chemical transfer operations.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to determine equipment is functioning properly from visual operation of valves.</li> <li>How to communicate with terminal personnel about test procedures.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific emergency shut down controls and valves.</li> <li>Knowledge of appropriate terminal personnel.</li> <li>Knowledge of hazards associated with pressurized liquefied gas cargo and additional specific hazards (e.g., flammability, reactivity, health, etc.).</li> <li>Knowledge of specific standard operating procedures.</li> </ul>

TASK CODE: III.C.9		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
2	75	1A	5	1A	20	2			2	1	3

TASK CODE: III.C.9	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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OBJECTIVE: Inspect tank barge/shoreside conditions prior to cargo transfer.

TASK: Checks marking on cargo hose according to check list in order to ensure it is certified for the specific pressurized liquefied gas cargo being handled.

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Equipment is properly checked.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In <u>all</u> cases of cargo transfer, a cargo hose certified for the specific pressurized liquefied gas is connected.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>How to check equipment.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific check list.</li> <li>Knowledge of cargo hose for a specific pressurized liquefied gas cargo (e.g., ethylene oxide).</li> <li>Knowledge of hazardous properties of a specific pressurized liquefied gas cargo (e.g., ethylene oxide's reactivity).</li> <li>Knowledge of prescribed procedures for connecting cargo hose.</li> <li>Knowledge of cargo hose, cargo piping, loading arms, terminal piping, etc.</li> </ul>



TASK CODE: III.C.10		WORKER FUNCTION LEVEL AND ORIENTATION					WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%					REASONING	MATH	LANGUAGE
4	60	1A	5	2A	35		4			4	3	4

TASK CODE: III.C.10	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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**OBJECTIVE:** Inspect tank barge/shoreside conditions prior to cargo transfer.

**TASK:** Examines and evaluates data concerning content of inert gas, uses portable gas analysis equipment, reads gages, and manipulates switches provided with equipment, following manufacturer's instructions and standard operating procedure, prior to loading a specific pressurized liquefied gas cargo in order to test a sample of inerting gas and to ensure it meets prescribed standards.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Examines and evaluates data thoroughly and accurately.</li> <li>Good judgment is used in discretionary areas.</li> <li>Manipulates equipment correctly.</li> <li>Completes tests when required.</li> <li>Completes tests accurately and thoroughly.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>X% complaints on accuracy of tests.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to evaluate data relating to inert gas content.</li> <li>How to manipulate analytic equipment.</li> <li>How to read dials (with decimal scales).</li> <li>How to read manufacturer's instructions.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific standard operating procedures and manufacturer's instructions.</li> <li>Knowledge of standards for inert gas padding of specific pressurized liquefied gas cargo (e.g., ethylene oxide requires a vapor space 98% pure and free of reactive materials.)</li> <li>Knowledge of specific pressurized liquefied gas cargo's hazards (e.g., ethylene oxide's flammability, reactivity, toxicity, etc.).</li> </ul>

TASK CODE: III.C.11		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
2	60	2	39	1A	10	3			3	2	3

TASK CODE: III.C.11	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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OBJECTIVE: Inspect tank barge/shoreside conditions prior to cargo transfer.

TASK: Checks visually craft alongside tank barge and communicates with cognizant personnel via dockside telephone or walkie-talkie following standard operating procedure, in order to ensure unauthorized craft is not alongside and authorized craft has been advised of cargo operations

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Completes check in a thorough and accurate manner.</li> <li>Communicates clearly with personnel.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Assures unauthorized craft are not alongside vessel and <u>all</u> authorized craft are aware of cargo operations.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>How to check for and identify unauthorized craft.</li> </ul> <u>Specified:</u> <ul style="list-style-type: none"> <li>Knowledge of craft alongside.</li> <li>Knowledge of ship's radio.</li> <li>Knowledge of specific standard operating procedures.</li> </ul>



TASK CODE: III.C.12		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS		GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%			REASONING	MATH	LANGUAGE
4	90	1A	5	1A	5	5		4	3	3

TASK CODE: III.C.12	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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OBJECTIVE: Inspect tank barge/shoreside conditions prior to cargo transfer.

TASK: Inspects and evaluates location of shoreside facilities, maintenance of tank barge and towboat mobility, and provisions for fire protection, state or change of winds, tides, seas, weather conditions, forces of nature and other circumstances generally beyond human control, according to check list and using own judgment, experience and knowledge in order to ensure safe conditions prior to transfer of cargo between tank barge and shore.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Inspection is thorough, accurate and complete.</li> <li>Considers both safety and environmental conditions having an effect on cargo transfer operations.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Judgment is good in X% of the cases.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to evaluate unsafe conditions having an effect on cargo transfer operations.</li> <li>General knowledge of shoreside facilities, vessel mobility at deckside, fire protection equipment, the effect of atmospheric and sea conditions on vessel.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific check list.</li> </ul>

TASK CODE: III.C.13		WORKER FUNCTION LEVEL AND ORIENTATION					WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%					REASONING	MATH	LANGUAGE
4	80	1	5	1	15		4			4	3	4

TASK CODE: III.C.13	GOAL: safety.	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations
OBJECTIVE: Inspect tank barge/shoreside conditions prior to cargo transfer.		

TASK: Examines and evaluates data concerning tank barge and shoreside inspections prior to cargo transfer operations using own knowledge and judgment or standard operating procedure, in order to determine if conditions are appropriate and safe for commencement of cargo transfer operations.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>• Good judgment is used in discretionary areas.</li> <li>• Evaluates/examines data thoroughly and accurately.</li> <li>• Shows awareness of potential hazards associated with improper, inadequate inspection.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>• Examines <u>all</u> available data.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>• General knowledge of the preparations and inspections necessary for safe, efficient cargo transfer operations.</li> <li>• How to identify and evaluate factors leading to unsafe conditions for cargo transfer operations.</li> <li>• General knowledge of variations in preparations and inspections as a function of cargo types or categories.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>• Knowledge of chemical characteristics and hazardous properties of the various cargoes being transferred.</li> <li>• Knowledge of unique or unusual tank barge, shoreside, environmental characteristics or conditions having an effect on the commencement of cargo transfer operations.</li> <li>• Knowledge of specific standard operating procedures.</li> </ul>



TASK CODE: III.D.1		WORKER FUNCTION LEVEL AND ORIENTATION					WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%					REASONING	MATH	LANGUAGE
4	50	5	40	1	10		4			4	3	4

TASK CODE: III.D.1	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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OBJECTIVE: Start and conduct cargo transfer operations.

TASK: Directs personnel in the initiation and conduct of pressurized liquefied gas cargo transfer operations, following standard operating procedure, using walkie-talkie equipment or face-to-face contact when necessary, and using own knowledge of transfer operations and personal judgment in order to transfer cargo safely.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>• Uses good judgment in discretionary areas.</li> <li>• Transfer operations are conducted efficiently, safely and according to standard operating procedures.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>• Fewer than XZ number of complaints that communication is not effective.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>• How to understand, interpret standard operating procedures, relevant to cargo transfer operations.</li> <li>• General knowledge of the hazards and problems commonly associated with pressurized liquefied gas cargo transfer operations.</li> <li>• How to supervise and communicate with shipboard personnel.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>• Knowledge of specific standard operating procedures.</li> <li>• Knowledge of properties and hazards of particular cargo being transferred.</li> <li>• Knowledge of cargo transfer equipment and procedures specific to barge or terminal.</li> </ul>

TASK CODE: III.D.2		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	'THINGS	%				REASONING	MATH	LANGUAGE
3B	40	2	45	2A	15	3			3	2	4

TASK CODE: III.D.2	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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OBJECTIVE: Start and conduct cargo transfer operations.

TASK: Communicates via walkie-talkie or in person with terminal authorities concerning his readiness to commence transfer operations after completing inspections required prior to cargo transfer, in order to outline general procedures and agree to designated communications and signalling procedures under normal and emergency conditions.

PERFORMANCE STANDARDS	TRAINING CONTENT
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"> <li>Communicates clearly and concisely and fully understands received communications.</li> </ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"> <li>Communicates <u>all</u> pertinent information relating to cargo transfer procedures and readiness to commence operations.</li> <li>Understands <u>all</u> data received from terminal authorities.</li> </ul>	<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>How to use portable communications equipment.</li> <li>How to use and understand terminology related to the transfer of pressurized liquefied gas bulk cargo.</li> <li>How to judge the readiness of equipment and personnel for the commencement of cargo operations.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>Knowledge of intended cargo transfer operations.</li> <li>Knowledge of required inspection and preparations prior to transfer of cargo.</li> </ul>



TASK CODE: III.D.3		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
4	80	1A	10	1A	10	4			4	3	4

TASK CODE: III.D.3	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
OBJECTIVE:	Start and conduct cargo transfer operations.

TASK: Evaluates prevailing conditions during the loading of pressurized liquefied chemical gas cargo aboard tank barge, following standard operating procedure, using own judgment and knowledge, in order to determine whether or not packaged goods and freight can be loaded or discharged on tank barge.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Inspection and evaluation is thorough, accurate and complete.</li> <li>Considers environmental conditions having an effect on cargo transfer operations.</li> <li>Uses good judgment in discretionary areas.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In <u>all</u> cases, does not permit explosives to be loaded.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>General knowledge of the effects of environmental conditions on cargo transfer operations (weather, sea state, vessel traffic in vicinity, etc.).</li> <li>How to evaluate unsafe conditions having an effect on cargo transfer operations.</li> <li>How to read and follow standard operating procedures.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of standard operating procedures.</li> <li>Knowledge of hazardous properties of specific pressurized liquefied gas cargo.</li> <li>Knowledge of arrangement of lines, pumps, valves and venting of specific vessel.</li> </ul>

TASK CODE: III.D.4		WORKER FUNCTION LEVEL AND ORIENTATION					WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%					REASONING	MATH	LANGUAGE
3B	40	2	30	2B	30		3			4	3	4

TASK CODE: III.D.4	GOAL: safely.	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations
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OBJECTIVE: Start and conduct cargo transfer operations.

TASK: Operates cargo valve (adjusts valve opening by manually turning handwheel), talks on walkie-talkie to shoreside personnel operating controls to inert gas generator subsystem to regulate flow of inert gas into cargo lines and cargo tanks, observes tank pressure gage, following standard operating procedure, in order to purge the cargo handling subsystem of air prior to loading pressurized liquefied chemical gas that is flammable or reactive with air.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Inert gas is supplied to cargo pipe lines and cargo tanks at proper rate.</li> <li>Purges air from cargo transfer subsystem in a thorough manner.</li> <li>Maintains effective communication with personnel.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>A negligible amount (less than X%) of air remains in system upon completion of purging operation.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to operate cargo valve.</li> <li>How to communicate with personnel.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of hazards associated with pressurized liquefied gas and additional hazards (e.g., flammability, reactivity with air, etc.).</li> <li>Knowledge of physical and chemical properties of specific pressurized liquefied gas.</li> <li>Knowledge of vessel's cargo transfer subsystem.</li> <li>Knowledge of specific standard operating procedures.</li> </ul>



TASK CODE: III.D.5		WORKER FUNCTION LEVEL AND ORIENTATION				GENERAL EDUCATIONAL DEVELOPMENT			
DATA	%	PEOPLE	%	THINGS	%	WORKER INSTRUCTIONS	REASONING	MATH	LANGUAGE
3B	50	2	20	2B	30	3	3	3	4

TASK CODE: III.D.5	GOAL: safety.	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations
OBJECTIVE: Start and conduct cargo transfer operations.		
<p>TASK: Operates cargo valves (adjusts valve opening by turning handwheel), talks on walkie-talkie to shoreside personnel operating controls to pump, observes cargo connections and hose for leakage and operating pressure gage on cargo system, complying with specific cargo loading limitations noted on tank barge's certificate of inspection, and following standard operating procedure, using own judgment and knowledge in order to transfer cargo without leakage to environment.</p>		
PERFORMANCE STANDARDS		TRAINING CONTENT
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"> <li>• Maintains effective communication with personnel.</li> <li>• Controls pressurized liquefied chemical gas cargo transfer carefully and correctly.</li> <li>• Starts transfer slowly.</li> </ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"> <li>• No significant amount of cargo is released to the environment in all cases of transfer.</li> <li>• Overload of individual tanks does not occur.</li> </ul>		<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>• General knowledge of operating principles of cargo pump, cargo valves, pressure indicators, ullage indicators, etc.</li> <li>• How to operate controls on a control panel.</li> <li>• How to read gages (decimal indicators).</li> <li>• How to read and follow standard operating procedures.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>• Knowledge of standard operating procedures and loading limitation on tank barge's certificate of inspection.</li> <li>• Knowledge of specific pressurized liquefied gas cargo properties, characteristics and hazards.</li> <li>• Knowledge of specific cargo pump operation, cargo valves, cargo pipe connections, pressure indicators, ullage indicators, etc.</li> </ul>

TASK CODE: III.D.6

WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE
3B	40	2	30	2B	30	3	4	3	4

TASK CODE: III.D.6      GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.

OBJECTIVE: Start and conduct cargo transfer operations.

TASK: Operates cargo valve (adjusts valve opening by manually turning handwheel), talks on walkie-talkie to shoreside personnel operating controls to cargo pump to regulate flow, slowly loads pressurized liquefied gas, following standard operating procedure, in order to avoid damage due to rapid cooling of cargo tank structures as a result of sudden adiabatic expansion of liquid upon entry.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>• Cargo loading rate is controlled slowly and carefully.</li> <li>• Maintains effective communication with personnel.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>• In all cases of pressurized liquefied gas cargo transfer, rapid cooling of cargo tank structure is prevented.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>• General knowledge of operating principles of cargo transfer subsystem.</li> <li>• How to operate controls on panel open and close valve, read dials.</li> <li>• How to read and follow standard operating procedure.</li> <li>• How to communicate with personnel.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>• Knowledge of physical and chemical properties of the specific pressurized liquefied gas.</li> <li>• Knowledge of hazards associated with pressurized liquefied gas and additional specific hazards (e.g., flammability, reactivity, toxicity, etc.).</li> <li>• Knowledge of loading rate and tank temperature limitations.</li> <li>• Knowledge of specific standard operating procedures.</li> </ul>



TASK CODE: III.D.7		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	50	2	20	2B	30	3			4	3	4

TASK CODE: III.D.7	GOAL: safely.	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations	
OBJECTIVE: Start and conduct cargo transfer operations.			
TASK: Operates cargo valve (adjusts valve opening by manually turning handwheel), talks on walkie-talkie to shoreside personnel operating controls to vaporizer (heat exchanger) to raise temperature of pressurized liquefied gas cargo and above ambient condition, following standard operating procedure, in order to pressurize and discharge liquefied gas cargo from tank.			
PERFORMANCE STANDARDS		TRAINING CONTENT	
<u>Descriptive:</u> <ul style="list-style-type: none"><li>• Cargo temperature is controlled carefully and accurately.</li><li>• Maintains effective communication with personnel.</li></ul>		<u>Functional:</u> <ul style="list-style-type: none"><li>• General knowledge of vaporizer operating techniques.</li><li>• How to operate cargo valves, read dials.</li><li>• How to read and follow standard operating procedures.</li><li>• How to communicate with personnel.</li></ul>	
<u>Numerical:</u> <ul style="list-style-type: none"><li>• Temperature of pressurized liquefied gas cargo is controlled within specified limits in <u>all</u> cases.</li></ul>		<u>Specific:</u> <ul style="list-style-type: none"><li>• Knowledge of physical and chemical properties of the specific pressurized liquefied gas.</li><li>• Knowledge of hazards associated with pressurized liquefied gas and additional specific hazards (e.g., flammability, reactivity, toxicity, etc.).</li><li>• Knowledge of specific temperature limits for pressurized liquefied gas cargo.</li><li>• Knowledge of specific standard operating procedures.</li></ul>	

TASK CODE: III.D.8		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	40	2	30	2B	30	3			4	3	4

TASK CODE: III.D.8	GOAL: safety.	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations
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OBJECTIVE: Start and conduct cargo transfer operations.

TASK: Operates cargo valves (closes valves by manually turning handwheel) expeditiously when relief valves on cargo tank lift during cargo transfer, talks on walkie-talkie to shoreside personnel to inform them of actions being taken on barge, following standard operating procedure, in order to stop cargo transfer and minimize pressurized liquefied gas release to the atmosphere.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Shuts down cargo transfer operations immediately.</li> <li>Responds quickly and positively in emergency situations.</li> <li>Maintains effective communication.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Takes immediate action to stop cargo transfer in <u>all</u> cases where relief valves lift.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to operate cargo valves.</li> <li>How to positively respond in emergency situations.</li> <li>General knowledge of operating principles of cargo transfer system.</li> <li>How to communicate with personnel.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific emergency shut down controls.</li> <li>Knowledge of hazards associated with pressurized liquefied gas and additional hazards (e.g., flammability, reactivity, etc.).</li> <li>Knowledge of relief valve operation, relief valve settings, cargo tank working pressure, etc.</li> <li>Knowledge of specific cargo transfer subsystem (cargo tanks, cargo vents, cargo hose, pumps, etc.).</li> <li>Knowledge of specific standard operating procedures.</li> </ul>



TASK CODE: III.D.9		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	40	2	30	2B	30	3			4	3	4

TASK CODE: III.D.9	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.	PERFORMANCE STANDARDS		TRAINING CONTENT
OBJECTIVE: Start and conduct cargo transfer operations.	TASK: Operates cargo valve (closes valve by manually turning handwheel) expeditiously when cargo flow rate dial indicates automatic self-closing excess flow valve has been activated, talks on walkie-talkie to shoreside personnel to inform them of actions being taken following standard operating procedure, in order to stop pressurized liquefied gas cargo transfer until cause of excess flow is remedied.			
<u>Descriptive:</u> <ul style="list-style-type: none"><li>• Shuts down cargo transfer operations immediately.</li><li>• Responds quickly and positively in emergency situations.</li><li>• Maintains effective communication.</li></ul> <u>Numerical:</u> <ul style="list-style-type: none"><li>• Takes immediate action to stop cargo transfer in <u>all</u> cases where excess flow rates are indicated.</li></ul>	<u>Functional:</u> <ul style="list-style-type: none"><li>• How to operate cargo transfer controls.</li><li>• How to positively respond in emergency situations.</li><li>• General knowledge of operating principles of cargo transfer system.</li><li>• How to communicate with personnel.</li></ul> <u>Specific:</u> <ul style="list-style-type: none"><li>• Knowledge of standard operating procedures.</li><li>• Knowledge of specific emergency shut down controls.</li><li>• Knowledge of hazards associated with pressurized liquefied gas and additional specific hazards (e.g., flammability, reactivity, etc.).</li><li>• Knowledge of excess flow valve operation.</li><li>• Knowledge of specific cargo transfer subsystem (cargo tanks, cargo vents, cargo hose, cargo pumps, etc.).</li></ul>			

TASK CODE: III.D.10		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	40	1A	10	2B	50	3			3	3	4

TASK CODE: III.D.10	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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OBJECTIVE: Start and conduct cargo transfer operations.

TASK: Operates cargo valve (adjusts valve opening manually by turning handwheel) discontinuing cargo transfer during severe electrical storms or fire on wharf, tank barge or vicinity following emergency operating procedure, using own judgment and knowledge in order to stop cargo transfer during unsafe conditions.

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Description:</u> <ul style="list-style-type: none"> <li>Stops cargo transfer in an alert manner.</li> <li>Responds immediately and positively in emergency situations.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>How to operate cargo valves.</li> <li>How to positively respond in emergency situations.</li> <li>General knowledge of operating principles of cargo transfer subsystem.</li> </ul>
<u>Numerical:</u> <ul style="list-style-type: none"> <li>Takes instantaneous action to stop cargo transfer in <u>all</u> situations involving severe electrical storms and fire on wharf, tank barge or vicinity.</li> </ul>		<u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of emergency operating procedures that require discontinuance of transfer operations under certain conditions (electrical storms or fire on wharf, tank barge or vicinity).</li> <li>Knowledge of specific cargo transfer subsystem (cargo tanks, cargo vents, cargo hose, cargo pumps, etc.).</li> </ul>



TASK CODE: III.D.11

WORKER FUNCTION LEVEL AND ORIENTATION					WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%			REASONING	MATH	LANGUAGE
4	70	3B	25	1A	5		4	4	3	4

TASK CODE: III.D.11      GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.

OBJECTIVE: Start and conduct cargo transfer operations.

TASK: Inspects and evaluates prevailing conditions, communicates with terminal cargo handling personnel following standard operating procedure, using own judgment and knowledge, in order to determine whether another vessel can come alongside or remain alongside a barge adjacent to its cargo tanks while it is transferring pressurized liquefied gas cargo.

PERFORMANCE STANDARDS	TRAINING CONTENT
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"> <li>• Inspection and evaluation is thorough, accurate and complete.</li> <li>• Considers environmental conditions having an effect on cargo transfer operations.</li> <li>• Communicates with terminal personnel in a courteous and pleasant manner.</li> <li>• Uses good judgment in discretionary areas.</li> </ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"> <li>• Less than X% number of complaints of worker's manner.</li> </ul>	<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>• General knowledge of the effects of environmental conditions on cargo transfer operation (weather, sea state, vessel traffic, etc.).</li> <li>• How to evaluate unsafe conditions having an effect on cargo transfer operations.</li> <li>• How to establish rapport and communicate with terminal cargo handling personnel.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>• Knowledge of standard operating procedures.</li> <li>• Knowledge of hazardous properties of specific pressurized gas cargo.</li> <li>• Knowledge of arrangement of lines, pumps, valves and venting on specific barge.</li> </ul>

TASK CODE: III.D.12		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	85	1A	5	1A	10	4			4	3	4

TASK CODE: III.D.12	GOAL: safely.	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations
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OBJECTIVE: Start and conduct cargo transfer operations.

TASK: Gathers/collects information and data about cargo transfer, enters data in company logs, checks accuracy in conformity to norms of information and data following standard operating procedure, and using own judgment and knowledge in order to record accurate cargo data.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Log book entries are brief, complete and accurate.</li> <li>Records entries with reasonable speed.</li> <li>Evaluations are perceptive, accurate and thorough.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>No more than X errors or omissions of important information in 100% of entries.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to gather information from several sources.</li> <li>How to record information and data in log book (some data in decimals).</li> <li>How to check accuracy of cargo transfer data.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of physical and chemical properties of specific chemical cargo.</li> <li>Knowledge of standard operating procedures.</li> <li>Knowledge of cargo logs and data entries such as: cargo tank gauging before and after loading/discharging, starting and termination times of cargo transfer, cargo temperature, draft and load line marks.</li> </ul>



TASK CODE: III.E.1		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
4	50	5	40	1	10	4			4	3	4

TASK CODE: III.E.1	GOAL: safely. Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations
OBJECTIVE: Terminate cargo transfer operations.	
TASK: Directs personnel in the termination of cargo transfer operations, following standard operating procedure, using walkie-talkie equipment or face-to-face contact when necessary, and using own knowledge of cargo transfer operations and personal judgment when directing operations such as "topping off" cargo tank in order to ensure termination of cargo transfer is performed correctly and safely.	
PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Directs personnel effectively, correctly and safely.</li> <li>Transfer operations are terminated safely and according to standard operating procedure.</li> <li>Uses good judgment in discretionary areas.</li> <li>Maintains effective communication with personnel.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Fewer than X% complaints that communication is ineffective.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>General knowledge of cargo transfer operations and subsystems used in termination procedures.</li> <li>General knowledge of the hazards and problems commonly associated with pressurized liquefied gas cargo transfer operations.</li> <li>How to supervise/communicate with cargo handling personnel.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific standard operating procedure relevant to operations.</li> <li>Knowledge of properties and hazards of particular pressurized liquefied gas cargo being transferred.</li> <li>Knowledge of cargo transfer equipment and procedures specific to barge or terminal.</li> </ul>

TASK CODE: III.E.2		WORKER FUNCTION LEVEL AND ORIENTATION					WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%					REASONING	MATH	LANGUAGE
3B	40	2	30	2B	30		3			3	3	4

TASK CODE: III.E.2	GOAL: Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.
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OBJECTIVE: Terminate cargo transfer operations.

TASK: Operates cargo valve (adjusts valve opening by manually turning hand wheel), talks on walkie-talkie to shoreside personnel to regulate flow rate as tank is being "topped off", in order to terminate loading pressurized liquefied gas cargo.

PERFORMANCE STANDARDS	TRAINING CONTENT
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"> <li>• Maintains effective communication with personnel.</li> <li>• Controls filling of cargo tank carefully.</li> <li>• Slows rate of transfer as tank is being "topped off."</li> </ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"> <li>• Does not exceed specified filling density in all cases of pressurized liquefied gas cargo transfer (i.e., enough ullage remains so thermal expansion will not cause tanks to become liquid full before relief valves lift).</li> </ul>	<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>• General knowledge of operation of pressurized liquefied gas cargo transfer subsystem.</li> <li>• How to operate cargo valves.</li> <li>• How to read dials, recording equipment.</li> <li>• How to communicate with personnel.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>• How to regulate liquid cargo loading rate using specific controls.</li> <li>• Knowledge of specific cargo tank capacity and specified filling density for the particular pressurized liquefied gas.</li> <li>• Knowledge of physical and chemical properties of specific pressurized liquefied gas.</li> <li>• Knowledge of hazards associated with pressurized liquefied gas and additional specific hazards (e.g., flammability, reactivity, toxicity, etc.).</li> </ul>



**TASK CODE: III.E.3**

WORKER FUNCTION LEVEL AND ORIENTATION					GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	WORKER INSTRUCTIONS	REASONING	MATH LANGUAGE
3B	40	2	30	2B	30	3	3 4

**TASK CODE: III.E.3**      **GOAL:** Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations safely.

**OBJECTIVE:** Terminate cargo transfer operations.

**TASK:** Operates cargo valve (adjusts valve opening by manually turning handwheel), talks on walkie-talkie to shoreside personnel operating controls to compressor to regulate gas flow, following standard operating procedure, in order to reduce pressure in cargo tank to near ambient conditions, after completion of unloading pressurized liquefied gas cargo.

PERFORMANCE STANDARDS	TRAINING CONTENT
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"> <li>• Pressure in cargo tank is reduced in a thorough manner.</li> <li>• Maintains effective communication with personnel.</li> </ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"> <li>• In all cases, pressure in cargo tank is reduced to ambient conditions upon completion of unloading.</li> </ul>	<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>• How to operate cargo valve.</li> <li>• How to read and follow standard operating procedures (with decimal scales).</li> <li>• How to communicate with personnel.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>• Knowledge of shoreside compressor subsystem.</li> <li>• Knowledge of physical and chemical properties of specific pressurized liquefied gas.</li> <li>• Knowledge of hazards associated with pressurized liquefied gas and additional specific hazards (e.g., flammability, reactivity with air, etc.).</li> <li>• Knowledge of vessel's cargo transfer subsystem.</li> <li>• Knowledge of specific standard operating procedures.</li> </ul>

TASK CODE: III.E.4		WORKER FUNCTION LEVEL AND ORIENTATION					WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%					REASONING	MATH	LANGUAGE
1	30	2	30	2B	30		2			1	3	4

TASK CODE: III.E.4	GOAL: safely.	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations
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OBJECTIVE: Terminate cargo transfer operations.

TASK: Closes cargo valve (manually turns handwheel), talks to shoreside personnel to signal shutting down procedure, following standard operating procedure, in order to stop transfer operations carefully without rupturing cargo hose due to overpressure.

PERFORMANCE STANDARDS	TRAINING CONTENT
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"> <li>• Maintains effective communication with personnel.</li> <li>• Termination of cargo transfer operation is carefully controlled.</li> </ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"> <li>• Cargo hose rupture does not occur in <u>all</u> cargo transfer shutdowns.</li> </ul>	<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>• How to operate cargo valves.</li> <li>• How to read dials (with decimal scale).</li> <li>• General knowledge of cargo pump operation, piping arrangement, cargo valves, etc.</li> <li>• How to communicate with personnel.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>• Knowledge of standard operating procedures and manufacturer's recommended working pressure for specific cargo hose.</li> </ul>



TASK CODE:		III.E.5			
WORKER FUNCTION LEVEL AND ORIENTATION					
DATA	%	PEOPLE	%	THINGS	%
3B	50	2	25	2B	25

TASK CODE:		III.E.5		GOAL: safely.	
OBJECTIVE: Terminate cargo transfer operations.					
TASK: Operates cargo valve (adjusts valve opening by manually turning handwheel), talks on walkie-talkie to shoreside personnel operating controls to water pump to regulate water flow, following standard operating procedure, observes cargo tank loading dial, using own judgment and experience, in order to fill the space above a specific pressurized liquefied gas cargo with the correct amount of water padding.					

PERFORMANCE STANDARDS			TRAINING CONTENT		
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"> <li>Water pad is supplied carefully and correctly.</li> <li>Maintains effective communication with personnel.</li> </ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"> <li>In all cases where water padding of a specific chemical cargo is required, the correct amount of water is supplied to space above liquid in tank.</li> </ul>			<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>How to operate cargo valve.</li> <li>How to read dials (with decimal scale).</li> <li>How to read and follow prescribed procedures.</li> <li>How to communicate with personnel.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>Knowledge of water cargo pad subsystem (pumps, pipes, valves, cargo tanks, etc.).</li> <li>Knowledge of specific pressurized liquefied gas cargo requiring water pad and its hazards (e.g., autoignition temperature).</li> <li>Knowledge of specific standard operating procedures.</li> </ul>		

TASK CODE: III.E.6		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	50	2	25	2B	25	3			3	3	3

TASK CODE: III.E.6	GOAL: safely.	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations
OBJECTIVE:	Terminate cargo transfer operations.	

TASK: Operates cargo valve (adjusts valve opening by manually turning handwheel), talks on walkie-talkie to shoreside personnel operating controls to inert gas generator to regulate gas flow, following standard operating procedure, observes cargo tank pressure gage, in order to fill cargo tank space above a specific chemical cargo with the correct gas mixture.

PERFORMANCE STANDARDS	TRAINING CONTENT
<p><u>Descriptive:</u></p> <ul style="list-style-type: none"> <li>• Maintains effective communication.</li> <li>• Inert gas cargo pad is supplied carefully and correctly.</li> </ul> <p><u>Numerical:</u></p> <ul style="list-style-type: none"> <li>• In all cases where inert gas padding of a specific pressurized liquefied gas cargo is required, the correct gas mixture is supplied to the vapor space above the liquid in the tank.</li> </ul>	<p><u>Functional:</u></p> <ul style="list-style-type: none"> <li>• How to operate cargo valves.</li> <li>• How to read dials (decimal scale).</li> <li>• How to read and follow prescribed procedures.</li> <li>• How to communicate with personnel.</li> </ul> <p><u>Specific:</u></p> <ul style="list-style-type: none"> <li>• Knowledge of inert gas cargo pad subsystem (inert gas generator, pipes, pumps, etc.).</li> <li>• Knowledge of specific pressurized liquefied gas cargo's hazards (e.g., ethylene oxide's flammability and reactivity).</li> <li>• Knowledge of specific standard operating procedures.</li> <li>• Knowledge of inert gas standards for a particula cargo (e.g., ethylene oxide requires not less than 45% nitrogen and not more than 2% oxygen).</li> </ul>



TASK CODE: III.E.7		WORKER FUNCTION LEVEL AND ORIENTATION					WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%					REASONING	MATH	LANGUAGE
3B	50	2	25	2B	25		3			3	3	4

TASK CODE: III.E.7	GOAL: safely.		Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations	
OBJECTIVE:	Terminate cargo transfer operations.			
TASK: Operates cargo valve (adjusts valve opening by manually turning handwheel), talks on walkie-talkie to shoreside personnel operating controls to inert gas generator to regulate gas flow, following standard operating procedure and own judgment, in order to purge pressurized liquefied gas cargo from cargo hose and vent lines prior to disconnecting hose and lines between tank barge and shore.				
PERFORMANCE STANDARDS			TRAINING CONTENT	
<u>Descriptive:</u> <ul style="list-style-type: none"><li>● Maintains effective communication.</li><li>● Inert gas is supplied to cargo and vapor lines properly.</li><li>● Cargo liquid and vapor from pipelines are removed in a thorough manner.</li><li>● Pressure in cargo pipelines and cargo hose is near atmospheric pressure before disconnecting.</li></ul>			<u>Functional:</u> <ul style="list-style-type: none"><li>● How to operate cargo valves.</li><li>● How to communicate with personnel.</li></ul>	
<u>Numerical:</u> <ul style="list-style-type: none"><li>● In all cases, liquid and vapor are removed from pipelines prior to disconnecting shore ties upon completion of transfer of chemical cargo.</li></ul>			<u>Specific:</u> <ul style="list-style-type: none"><li>● Knowledge of specific standard operating procedures.</li><li>● Knowledge of inert gas subsystem.</li><li>● Knowledge of specific pressurized liquefied gas cargo's hazards (e.g., reactivity, toxicity, etc.).</li><li>● Knowledge of tank barge's cargo piping, vapor, pipelines, cargo valves, vapor relief valves, etc.</li></ul>	

TASK CODE: III.E.8		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
1A	5	1A	5	1A	90	1			1	1	1

TASK CODE: III.E.8	GOAL: safely.	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations
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OBJECTIVE:	Terminate cargo transfer operations.
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TASK:	Operates controls to cargo hose handling equipment (dockside or barge crane) using control panel push buttons, moves and positions cargo hose, following standard operating procedure, in order to drain hose into tank barge's tanks, buckets, into shore pipeline or drainage system.
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PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Positions cargo hose properly.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In all cases, residual liquid cargo is drained properly.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>General knowledge of operating principles of dockside crane, boom, etc.</li> <li>How to operate cargo hose handling equipment.</li> <li>How to position hose for drainage.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific cargo hose handling equipment, cargo tanks, shore pipelines and drainage system.</li> <li>Knowledge of specific standard operating procedures.</li> </ul>



TASK CODE: III.E.9		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	20	1A	5	2A	75	2			2	3	2

TASK CODE: III.E.9	GOAL: <u>safely.</u>	Conduct hazardous pressurized liquefied chemical gas bulk cargo transfer operations
OBJECTIVE:	Terminate cargo transfer operations.	
TASK:	Disconnects flanged joint between cargo hose and pipeline manifold and between barge's vent piping and shore vapor return line, following standard operating procedure, using available tools and equipment (lifting gear, such as dockside crane), wears protective clothing when required, in order to uncouple cargo transfer system between barge and shore.	

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Equipment is properly disconnected.</li> <li>Arrangements are completed thoroughly, according to procedures.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In all cases where specific chemical cargo is hazardous to health, wears protective clothing and takes adequate safety precautions.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to read and follow procedures for disconnecting equipment.</li> <li>How to handle equipment and tools while wearing personal protection equipment.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of standard operating procedures for disconnecting hose and vapor return subsystem.</li> <li>Knowledge of cargo lines and vapor return lines.</li> <li>Knowledge of required use of personal protection clothing (i.e., when chemical cargo is corrosive or has other health hazards).</li> <li>Knowledge of hazardous properties of specific pressurized liquefied gas cargo.</li> </ul>

TASK CODE: IV.A.1		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
3B	10	3	20	2B	70	4			4	2	4

TASK CODE: IV.A.1	GOAL: Protect life and property from cargo accidents.
OBJECTIVE: Control hazardous pressurized liquefied chemical gas spill/vapor emission.	

TASK: Operates remote valve controls (manually pulls lever) to close cargo control valves, or manually stops pump(s), closes pipeline/manifold valves, using additional personnel, as necessary, following emergency procedure, in order to stop cargo transfer operations.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Promptly secures cargo operations upon learning of spill.</li> <li>Correctly and expediently operates the valve controls.</li> <li>Concisely and clearly directs personnel.</li> <li>Clears liquid and vapor from lines after shut down.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In all cases, the valves are to be promptly and completely closed, using either local or remote controls.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>Understanding of the principles, operations and components of pressurized liquefied gas cargo handling system, such as pumps, valves, piping, and cargo handling instrumentation.</li> <li>How to close cargo control valves using remote controls or local controls at location of valve.</li> <li>How to direct personnel to assist in securing cargo handling operations.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of cargo handling system.</li> <li>Knowledge of emergency procedures for securing pressurized liquefied gas cargo operations.</li> </ul>



TASK CODE: IV.A.2		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
2	20	2	60	1C	20	2			2	1	2

TASK CODE: IV.A.2	GOAL: Protect life and property from cargo accidents.
OBJECTIVE: Control hazardous pressurized liquefied chemical gas spill/vapor emission.	

TASK: Speaks on telephone or public address communication system (turns switches, pushes button) following standard operating procedure, in order to alert personnel of the spill/potential hazard.

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Communication is prompt and effective.</li> <li>Ensures proper use of communication system discipline procedures.</li> <li>Is alert in responding to hazardous situation.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Notifies all appropriate personnel as soon as possible after discovery of spill/vapor emission.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>How to use telephone and public address communication system.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of communications system.</li> <li>Knowledge of specific standard operating procedures.</li> </ul>

TASK CODE: IV.A.3		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
4	80	2	10	1A	10	5			4	3	4

TASK CODE: IV.A.3	GOAL: Protect life and property from cargo accidents.
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OBJECTIVE: Control hazardous pressurized liquefied chemical gas spill/vapor emission.

TASK: Evaluates type and extent of spill and capabilities of personnel and equipment, using own knowledge of properties and hazards of cargo, layout and structure of cargo containment system, available personnel and equipment, weather conditions, procedures and advice from other personnel, when necessary, in order to determine source and best method to control and contain spill.

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Analyzes accurately the capabilities of personnel and equipment.</li> <li>Evaluation of various spill control and containment alternatives is thorough.</li> <li>Determines correctly the source of the leak.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>How to control and contain hazardous chemical spills/vapor emissions.</li> <li>How to evaluate the spill control/containment capabilities and limitations of personnel and equipment, under various weather conditions.</li> <li>How to determine the source of a hazardous chemical cargo leak/spill, vapor emission.</li> </ul>
<u>Numerical:</u> <ul style="list-style-type: none"> <li>In <u>all</u> cases, determines the best method to control and contain spill.</li> </ul>		<u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of personnel, spill control and containment equipment.</li> <li>Knowledge of procedure for controlling and containing hazardous cargo spills under various weather conditions.</li> </ul>



TASK CODE: IV.A.4		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%	INSTRUCTIONS			REASONING	MATH	LANGUAGE
4	25	5	65	1	10	4			4	2	4

TASK CODE: IV.A.4	GOAL: Protect life and property from cargo accidents.
OBJECTIVE:	Control hazardous pressurized liquefied chemical gas spill/vapor emission.

TASK: Directs personnel in the preparation and positioning of water hoses following standard operating procedure, in order to prepare for possible fire resulting from chemical spill.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Ensures that water hoses are prepared and positioned correctly and promptly.</li> <li>Direction of personnel is clear and unambiguous.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>All necessary and appropriate equipment is assembled.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to direct personnel in the preparation/positioning of water hoses, to control and contain hazardous spills/vapor emission.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of water hose equipment.</li> <li>Knowledge of procedure for making ready and positioning water hoses.</li> </ul>

TASK CODE: IV.A.5		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS		GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%			REASONING	MATH	LANGUAGE
4	25	5	65	1	10			4	3	4

TASK CODE: IV.A.5	GOAL: Protect life and property from cargo accidents.
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OBJECTIVE: Control hazardous pressurized liquefied chemical gas spill/vapor emission.

TASK: Directs personnel in clean-up the area in the vicinity of cargo spill and "knocking down" of hazardous chemical vapor with water, following emergency procedure, using judgment in minimizing the personnel hazard and potential of fire in order to flush chemical cargo spill area.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Area is promptly flushed with water.</li> <li>Exercises extreme care while flushing the spilled cargo.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In all cases, the flushing operation does not cause hazardous cargo exposure to personnel.</li> <li>In all cases, flushing with water is not permitted when chemical cargo is water reactive.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to direct personnel in an emergency situation to flush any non-contained, spilled cargo.</li> <li>How to operate firemain systems.</li> <li>How water affects vaporization rates and ignition probabilities of various hazardous chemical spills.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of firemain system.</li> <li>Knowledge of procedure for flushing spilled cargo.</li> </ul>



TASK CODE: IV.A.6		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
4	25	5	65	1A	10	5			4	3	4

TASK CODE: IV.A.6	GOAL: Protect life and property from cargo accidents.
OBJECTIVE: Control hazardous pressurized liquefied chemical gas spill/vapor emission.	

TASK: Directs personnel in the disconnection of cargo lines and vapor return lines between shoreside and barge following standard operating procedure, in order to prepare getting barge away from terminal

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Ensures lines are disconnected promptly and carefully in view of the dangerous situation.</li> <li>Directs personnel clearly and effectively.</li> <li>Cargo and vapor return lines are free of cargo and vapor prior to commencing the disconnect procedure.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li><u>All</u> cargo lines and vapor return lines are disconnected.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to disconnect cargo and vapor return lines from shoreside.</li> <li>How to direct personnel to disconnect cargo lines.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of barge's cargo transfer system.</li> <li>Knowledge of procedures for disconnecting cargo lines and vapor return lines.</li> </ul>

TASK CODE: IV.B.1								
WORKER FUNCTION LEVEL AND ORIENTATION				GENERAL EDUCATIONAL DEVELOPMENT				
DATA	%	PEOPLE	%	THINGS	WORKER INSTRUCTIONS	REASONING	MATH	LANGUAGE
3B	10	3	20	2B	4	4	3	4

TASK CODE: IV.B.1	GOAL: Protect life and property from cargo accidents.
<b>OBJECTIVE:</b> Initiate fire fighting onboard tank barge.	
<b>TASK:</b> Operates remote valve controls (manually pulls lever) to close cargo valves or manually stops pump(s), closes pipeline and manifold valves, obtains assistance from additional personnel, as necessary, following emergency procedure in order to stop cargo transfer operations when learning of fire aboard tank barge.	

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Promptly secures cargo operations upon learning of outbreak of fire.</li> <li>Correctly and expeditiously operates the remote valve controls.</li> <li>Expediently closes the cargo control valves, using the local controls where appropriate, or when the remote valve controls are inoperable.</li> <li>Concise and clearly directs personnel.</li> <li>Clears liquid and vapor from lines after shut down.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In all cases, the valves are to be promptly and completely closed, using either local or remote controls.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>Understanding of the principles, operations, and components of pressurized liquefied chemical gas cargo handling system such as pumps, valves, piping and cargo handling instrumentation.</li> <li>How to close cargo control valves using remote controls in cargo control room or local controls at location of valve.</li> <li>How to obtain personnel assistance in securing cargo handling operations.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of barge's cargo handling system.</li> <li>Knowledge of procedures for securing pressurized liquefied chemical gas cargo operations.</li> </ul>



TASK CODE:		IV.B.2									
WORKER FUNCTION LEVEL AND ORIENTATION							WORKER INSTRUCTIONS	GENERAL EDUCATIONAL DEVELOPMENT			
DATA	%	PEOPLE	%	THINGS	%	REASONING		MATH	LANGUAGE		
2	20	2	40	1A	40	2	2	3			

TASK CODE:	IV.B.2	GOAL: Protect life and property from cargo accidents.
OBJECTIVE: Initiate fire fighting onboard tank barge.		
TASK: Speaks to terminal personnel on telephone or walkie-talkie following emergency procedure, in order to notify personnel of fire.		
PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>• Communication is prompt and effective.</li> <li>• Ensures proper use of communication system discipline procedures.</li> <li>• Is alert in responding to manifest hazard.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>• Notifies all appropriate personnel as soon as possible after discovery of fire.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>• How to use telephone and walkie-talkie communication systems.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>• Knowledge of communications systems.</li> <li>• Knowledge of emergency operating procedures.</li> </ul>

TASK CODE: IV.B.3		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
4	80	2	10	1A	10	4			3	4	4

TASK CODE: IV.B.3	GOAL: Protect life and property from cargo accidents.
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OBJECTIVE: Initiate fire fighting onboard tank barge.

TASK: Evaluates type and extent of fire and the capabilities of fire fighting personnel and equipment, using own knowledge of cargo properties, and hazardous weather condition, following standard operating procedure, in order to determine the best method to extinguish and contain fire.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Analyzes accurately the capabilities and limitations of fire fighting personnel and equipment.</li> <li>Evaluates properly the effectiveness of the various fire fighting extinguishing agents for the type of fire, and weather conditions.</li> <li>Determines expeditiously and correctly the proper extinguishing agent and method for the chemical cargo and weather conditions.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In <u>all</u> cases, determines the best method to extinguish and contain the fire.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>The effects of various fire extinguishing agents, (i.e., water, foam, dry chemical) and types of combustible materials and chemicals.</li> <li>How to extinguish and contain fires of standard combustible material and hazardous chemicals.</li> <li>How to evaluate the capabilities and limitations of fire fighting personnel and equipment for various types of fires and weather conditions.</li> <li>How to apply the basic principles of heat transfer and smothering techniques in fire fighting.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of fire fighting personnel and equipment.</li> <li>Knowledge of procedure for fighting chemical cargo fires under various weather conditions.</li> </ul>



TASK CODE: IV.B.4		WORKER FUNCTION LEVEL AND ORIENTATION					GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%	WORKER INSTRUCTIONS	REASONING	MATH	LANGUAGE
2	10	1A	5	2B	85	2	3	2	3

TASK CODE: IV.B.4	GOAL: Protect life and property from cargo accidents.
OBJECTIVE: Initiate fire fighting onboard tank barge.	
TASK: Opens control, suction and discharge valves to fire pump(s) following standard operating procedure, in order to activate firemain system for containing and extinguishing fire.	
PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Expediently opens the control valves to effectively pressurize the firemain system.</li> <li>Promptly and in the correct sequence opens the suction discharge valves and properly activates fire pumps.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In all cases, ensures fire pump is started in sufficient time to protect barge and dockside facilities.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to operate fire pump(s).</li> <li>Understanding of the principles, operations, and components of the fire main system.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of firemain system.</li> <li>Knowledge of procedures for operating the fire main system.</li> </ul>

TASK CODE: IV.B.5		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE		
4	25	5	65	1	10		4	3	4		

TASK CODE: IV.B.5	GOAL: Protect life and property from cargo accidents.
OBJECTIVE: Initiate fire fighting onboard tank barge.	
TASK: Directs personnel in laying out of fire fighting hoses and the selection, operation and positioning of hoses, fire extinguishers, and other fire fighting equipment following emergency procedure and using own knowledge and judgment in order to contain and extinguish the fire.	

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>• Fire hoses are promptly and properly laid out.</li> <li>• Personnel and equipment are prepared expeditiously and effectively to contain and extinguish fire.</li> <li>• Maintains effective communication with fire fighting personnel.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>• In <u>all</u> cases, supervises personnel in such a manner that fire is contained and extinguished.</li> <li>• In <u>all</u> cases, contains and extinguishes fire before it causes ignition of cargo tank contents.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>• The effects of extinguishing agents, (i.e., water, foam, dry chemicals) on various types of combustible materials/chemicals.</li> <li>• How to contain and extinguish fires of standard combustible materials and pressurized liquefied gas.</li> <li>• How to lay out fire hoses in containing and extinguishing fires.</li> <li>• How to evaluate the capabilities of fire fighting personnel and equipment under various conditions.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>• Knowledge of fire fighting personnel and equipment.</li> <li>• Knowledge of procedures for fighting fires, including pressurized liquefied gas fires.</li> </ul>	



TASK CODE: IV.B.6		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%		REASONING	MATH	LANGUAGE		
4	25	5	65	1	10	5	4	3	4		

TASK CODE: IV.B.6	GOAL: Protect life and property from cargo accidents.
OBJECTIVE:	Initiate fire fighting onboard tank barge.
TASK: Directs personnel in the disconnection of cargo lines and vapor return lines between shoreside and barge, following standard operating procedure, in order to prepare for barge movement away from terminal and prevent general conflagration.	

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Ensures lines are disconnected promptly and carefully.</li> <li>Directs personnel clearly and effectively.</li> <li>Cargo lines and vapor return lines are free of cargo and vapor prior to commencing disconnect procedures.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>All cargo lines and vapor return lines are disconnected and barge detached.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to disconnect cargo and vapor return lines from shoreside.</li> <li>How to direct personnel to assist in disconnecting cargo lines.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of cargo transfer system.</li> <li>Knowledge of procedures for disconnecting cargo lines and vapor return lines.</li> </ul>

TASK CODE: IV.C.1		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%			REASONING	MATH	LANGUAGE	
4	20	4C	70	1A	10	3		4	2	4	

TASK CODE: IV.C.1	GOAL: Protect life and property from cargo accidents.
OBJECTIVE: Administer first aid.	
TASK: Provides first aid to a victim exposed to pressurized liquefied gas cargo extremely hazardous to health, following standard operating procedure, moves victim from accident scene, removes contaminated clothing, washes spill from skin with gentle flow of water, calls for medical attention, readies special medical kit for doctor's use, in order to treat victim.	

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Provides treatment for victim exposed to pressurized liquefied gas cargo in a careful, expeditious, and proper manner.</li> <li>Calls for medical attention (doctor's assistance) promptly, when required.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Medical attention (doctor's assistance) is called for in <u>all</u> cases where required.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>General knowledge of procedures for treatment of persons exposed to hazardous chemicals gained by attending simulation drills/training.</li> <li>How to treat individuals exposed to pressurized liquefied gases.</li> <li>How to obtain medical assistance.</li> <li>How to read and follow medical instructions.</li> <li>General knowledge of contents of First Aid Manual, International Medical Guide for Ships, Medical First Aid Guide for Use in Accidents Involving Dangerous Goods.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of location of special medical kit containing particular antidotes.</li> <li>Knowledge of contents of specific medical instructions for treating victims exposed to chemicals.</li> <li>Knowledge of specific standard operating procedures.</li> </ul>	



TASK CODE: IV.C.2		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
4	20	4C	70	1A	10	3			4	2	4

TASK CODE: IV.C.2	GOAL: Protect life and property from cargo accidents.
OBJECTIVE: Administer first aid.	
TASK: Provides first aid to conscious victim suffering from shock, following standard operating procedure and first aid instructions; moves victim to suitable surrounding (away from cause of shock); protects victim by supplying heat, position and stimulants, using available first aid equipment, in order to treat conscious victim.	

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Treats victim for shock in a careful, expeditious and proper manner.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In <u>all</u> cases, no attempt is made to make an unconscious person drink.</li> <li>Stimulants are given in proper quantities and at proper rates in accordance with standard operating procedure.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>General knowledge of procedures for treatment of shock gained by attending simulation drills/training.</li> <li>How to treat a victim suffering from shock.</li> <li>How to read and follow standard operating procedures and first aid instructions.</li> <li>General knowledge of contents of First Aid Manual, International Medical Guide for Ships, Medical First Aid Guide for Use in Accidents Involving Dangerous Goods.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of how to supply heat, position and stimulants (i.e., removes wet clothing and dries victim, wraps victim in blankets, applies external heat using hot water bottles, heating pads to various areas (feet, thighs, abdomen), places body so gravity will help blood flow to brain and heart, gives conscious person stimulants such as aromatic spirits of ammonia, coffee, tea, hot milk, hot water).</li> </ul>
<ul style="list-style-type: none"> <li>Knowledge of location of first aid equipment and stimulants.</li> <li>Knowledge of specific standard operating procedure and first aid instructions on the treatment of shock.</li> </ul>		

TASK CODE: IV.C.3	
WORKER FUNCTION LEVEL AND ORIENTATION	
DATA	% PEOPLE THINGS %
4	20 4C 70 1A 10

WORKER INSTRUCTIONS		GENERAL EDUCATIONAL DEVELOPMENT	
3		REASONING	MATH
		4	2
			4

TASK CODE: IV.C.3	GOAL: Protect life and property from cargo accidents.
OBJECTIVE: Administer first aid.	
TASK: Provides first aid to unconscious victim by administering mouth-to-mouth resuscitation, following standard operating procedure and instructions in first aid manual, and using own judgment as to whether victim should be moved in order to administer artificial respiration to unconscious victim.	

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Exercises good judgment as to whether victim should be moved.</li> <li>Moves injured person carefully.</li> <li>Cleans victim's mouth and throat quickly.</li> <li>Forces air into victim's mouth properly and gently.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Performs artificial respiration gently and at proper rate in accordance with standard operating procedure.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>General knowledge of artificial respiration procedures gained by attending simulation drills/training.</li> <li>How to prepare a victim for artificial respiration.</li> <li>How to administer artificial respiration by mouth-to-mouth resuscitation.</li> <li>How to read and follow first aid procedures.</li> <li>General knowledge of contents of First Aid Manual, International Medical Guide for Ships, Medical First Aid Guide for Use in Accidents Involving Dangerous Goods.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific procedures on mouth-to-mouth resuscitation (i.e., moves injured person carefully, removes foreign matter from mouth, pulls victim's head back, extending neck, holds lower jaw upward, forces own air into victim's mouth gently and at proper rate).</li> </ul>



TASK CODE: IV.D.1		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
2	25	2	70	1A	5	3			4	2	4

TASK CODE: IV.D.1	GOAL: Protect life and property from cargo accidents.
OBJECTIVE:	Report hazardous chemical cargo accident.

**TASK:** Reports verbally by telephone an incident that occurred on board the tank barge as a result of the pressurized liquefied gas cargo being transported, following standard operating procedure, in order to immediately notify proper authorities of a cargo accident.

PERFORMANCE STANDARDS	TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Information transmitted is accurate and complete.</li> <li>Verbal transmission is clear and concise.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>In all cases where the incident is a direct result of the hazardous chemical cargo being transported an immediate verbal report is made to proper authorities.</li> </ul>	<u>Functional:</u> <ul style="list-style-type: none"> <li>How to deliver information to proper authorities.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of proper authorities.</li> <li>Knowledge of standard operating procedures.</li> <li>Knowledge of accident aboard vessel.</li> <li>Knowledge of hazardous properties of specific pressurized liquefied chemical gas cargo.</li> </ul>

TASK CODE: IV.D.2		WORKER FUNCTION LEVEL AND ORIENTATION				WORKER INSTRUCTIONS			GENERAL EDUCATIONAL DEVELOPMENT		
DATA	%	PEOPLE	%	THINGS	%				REASONING	MATH	LANGUAGE
4	60	2	35	1A	5	4			4	3	4

TASK CODE: IV.D.2	GOAL: Protect life and property from cargo accidents.
OBJECTIVE: Report hazardous chemical cargo accident.	

TASK: Investigates (examines, evaluates) accidents, gathers information about an incident aboard tank barge which may be a result of the pressurized liquefied gas cargo, asks questions of witnesses, listens to and evaluates responses, visually examines scene of accident, writes down relevant data on standard form, following standard operating procedure, in order to prepare written report to proper authorities.

PERFORMANCE STANDARDS		TRAINING CONTENT
<u>Descriptive:</u> <ul style="list-style-type: none"> <li>Information is relevant, complete and accurate.</li> <li>Analysis is perceptive, accurate and thorough.</li> </ul> <u>Numerical:</u> <ul style="list-style-type: none"> <li>Completes and sends report within specified time frame of standard operating procedures.</li> <li>Less than X% complaints regarding inadequate/insufficient information.</li> </ul>		<u>Functional:</u> <ul style="list-style-type: none"> <li>How to investigate a chemical cargo accident.</li> <li>How to identify, classify, compile specific information from a mass of data.</li> <li>How to evaluate information in relation to criteria and principles affecting the transport of pressurized liquefied gas cargo.</li> <li>How to elicit information from people.</li> </ul> <u>Specific:</u> <ul style="list-style-type: none"> <li>Knowledge of specific standard operating procedures.</li> <li>Knowledge of report forms which requires calculations in decimals.</li> <li>Knowledge of accident location, people involved, hazardous properties of specific chemical cargo.</li> <li>Knowledge of proper authorities.</li> </ul>